AIWA®

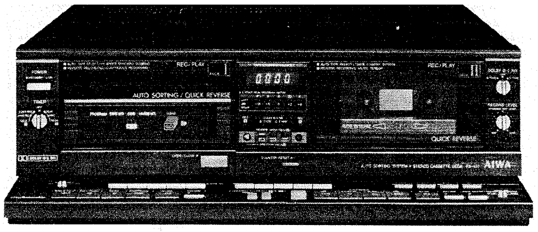
S/M Code No. 86-004
DATE OF ISSUE 3/1986-S

SERVICE MANUAL

MODEL NO.

STEREO CASSETTE DECK

FX-A770



TYPE. HB, UB, CB, EB, KB,

SPECIFICATIONS

Type	Stereo cassette tape deck
Track format	4 tracks 2 channels
Power supply	
FX-A770K	AC 240 V, 50/60 Hz
FX-A770E	AC 220 V, 50/60 Hz
FX-A770H	AC 120 V/220 V/240 V switchable, 50/60 Hz
FX-A770U, C	AC 120 V, 50 Hz
Power consumption	30 W
Frequency response	METAL tape: 20-17,000 Hz CrO₂ position tape: 20-16,000 Hz LH tape: 20-15,000 Hz
Signal-to-noise ratio	73 dB (METAL tape DOLBY C NR ON)
Wow and flutter	According to DIN 45 500 0.16% 0.06% (WRMS)

Tape speed	4.8 cm/sec. (1-7/8 ips) 9.5 cm/sec. (high speed dubbing only)
Recording system	AC bias (frequency 100 kHz)
Erase system	AC erase
Motors	Capstan: DC servo motor × 2 Auto sorting: DC motor × 2
Head	Recording/playback head × 2 Erase head × 2
Inputs	LINE IN maximum input sensitivity: 50 mV (over 50 kΩ)
Outputs	LINE OUT standard output level: 280 mV (0 VU); suitable load impedance: over 50 kΩ
Dimensions	330(W) × 106.5(H) × 346(D) mm
Weight	6 kg
Accessories	Sorting cartridge (2) Head cleaning swab (1)

- Design and specifications are subject to change without notice.
- Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.

CONTENTS

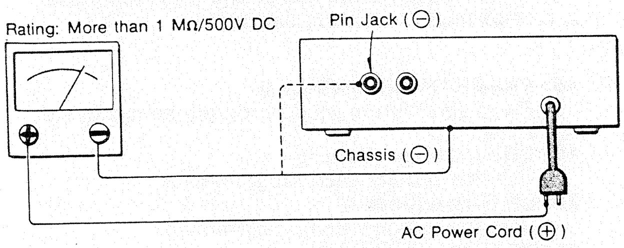
- CAUTIONS……3
- NAMES OF PARTS AND THEIR FUNCTION……4~5
- DISASSEMBLY INSTRUCTIONS……6~8
- ELECTRICAL MAIN PARTS LIST……9~12
- FL PIN CONNECTION……13~14
- CIRCUIT BOARD LOCATION VIEW……15~16
- DOLBY-NR SCHEMATIC DIAGRAM, WIRING……17~18
- ADJUSTMENT……19~20
- PRACTICAL SERVICE FIGURE……21
- SCHEMATIC DIAGRAM……22~24
- WIRING (MAIN C. B etc.) ……25~27
- SCHEMATIC DIAGRAM……28~30
- WIRING (MAIN C. B etc.) ……31~33
- SCHEMATIC DIAGRAM……34~36
- WIRING (KEY C. B etc.) ……37~39
- EXPLANATION OF IC……40~46
- WAVEFORM, TIMING CHART……47~50
- BLOCK DIAGRAM……51~54
- CIRCUIT DESCRIPTION……55~58
- EXPLODED VIEW-1……60
  MECHANICAL PARTS LIST……61~62
- EXPLODED VIEW-2……64
  MECHANICAL PARTS LIST……65
- EXPLODED VIEW-3……66
  MECHANICAL PARTS LIST……67
- EXPLODED VIEW-4……68
  MECHANICAL PARTS LIST……69
- ACCESSORIES/PACKAGE LIST……70

Follow the instructions carefully, which will allow the user to optimise the products' performance and give many years of service.

1. **No scratch and melting shall be made to covered lead-wires of an a.c. primary circuit including mains leads.**
2. **No illegibility shall be given to the specification plate, the caution labels, the fuse labels and others.**
3. **When, on pattern sides of circuit boards, additional repair-parts have been made up, the parts shall be firmly glued to circuit boards or other components, unless the parts can be attached firmly.**
4. **The following matters shall be maintained as they are, when repairing.**
    1) Soldering of lead-wire ends
        * Care should be taken of the space distance in an a.c. primary circuit as well as soldering.
    2) Wiring and holding of lead-wires with wire-clips and binders
    3) Materials of lead-wires
        * e.g.; For UL models, lead-wires to be used shall be approved or accepted by the UL.
    4) Location of all kinds of insulators
    5) Setting of voltage selector switch
        * Set the Voltage Selector Switch to 240V, 220V, or 120V, According to your Local Voltage.
5. **After repaired, the insulation resistance or leakage current shall be measured with 500 ± 5V D.C and shall be not less than 1MΩ.**

Measuring Point

Connect to Chassis or Outside ⊖ of Pin Jack



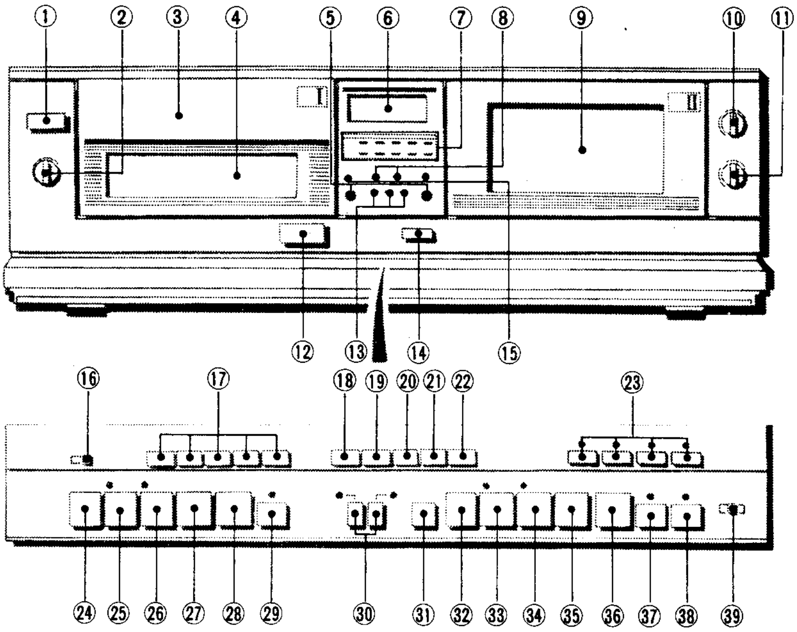
6. **General instructions for mechanism repair**
    1) The heads, capstan and pinch roller shall be cleaned of good quality alcohol after repaired, because dirty heads shall cause distorted sounds while dirty capstan and pinch roller shall occur wow/flutter and take-up fault.
    2) Lubricants been stained the surfaces of transmitting portion of the belts, idlers, capstan and pinch roller shall be removed, because slippery and faulty tape travel shall be caused.
    3) When oiling, only one or two drops shall be applied so as not to run over and be dispersed. Note should be taken of the metal fitting for the capstan and rotating portions of the idlers and pinch-roller, especially.
    4) E-rings and poly slider washers shall be replaced with new ones, if once those have been removed. — No re-utilization due to unreliability.
    5) Regular spare-parts shall always be used for repair, because using irregular parts and tampering with the products shall cause deterioration, mulfunction and damage.

Caution for Repairing

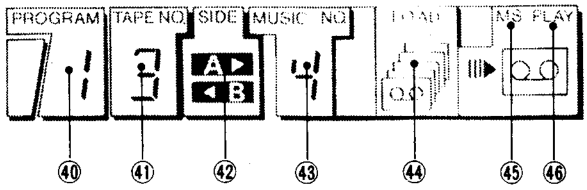
Be sure to set the unit into the follwing states when the repairing has been completed.

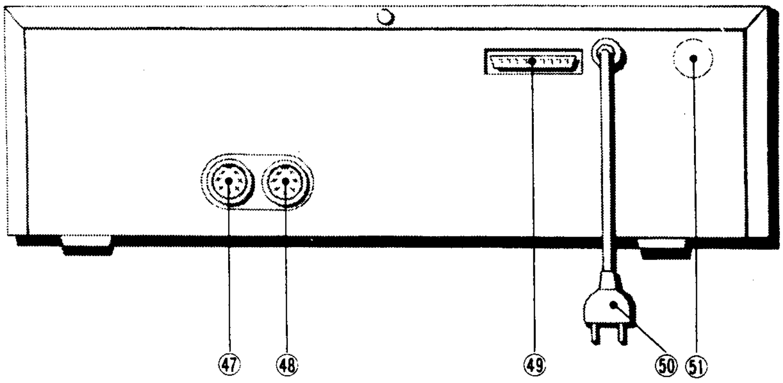
1) Loading of the cassette will be started when the power supply is turned on and the PLAY button of deck I is pressed.
   Therefore, the power supply should be cut off when the cassette box assembly has been mounted onto the mechanicm.
2) Install the fixing screws for transportation.

NAMES OF PARTS AND THEIR FUNCTION



1. **POWER switch**
   For switching power ON/OFF (STANDBY).
2. **TIMER switch**
   For unattended recording or wake-up playback.
3. **Cassette holder (Deck I)**
   Insert the cassette tape in the holder.
4. **Display (Deck I)**
5. **Tape-run direction indicator (DIRECTION) (Deck II)**
   Lights to indicate tape running direction.
   Warning: Recording starts in the direction shown by this indicator.
6. **TAPE COUNTER (Deck II)**
7. **Peak Program meter (5 POINT PEAK PROGRAM METER)**
   Displays volume levels during recording or playback.
8. **DOLBY NR B-C indicator**
   Lights up to indicate the DOLBY NR system is turned on for noise reduction.
9. **Cassette holder (Deck II)**
   Insert the cassette tape in the holder.
10. **DOLBY B-C NR switch (Deck II)**
    Used to select the Dolby NR method.
    - For Dolby-B NR..B-TYPE
    - For Dolby-C NR..C-TYPE
    - For non-Dolby NR..OFF
11. **RECORD LEVEL control knob**
    For setting the recording level. Normally set the control knob to the center click position, when recording from the tuner or turntable in the VX System.
12. **OPEN/CLOSE button (Deck I)**
    Press this button to open or close the sorting cartridge.
13. **REVERSE MODE indicator (Deck II)**
    Lights to indicate Reverse mode.
14. **COUNTER RESET button**
    Resets the digital counter display to "0000"
15. **REC indicator**
16. **BLANK SKIP switch**
    When this switch is ON, the tape is fast-forwarded if unrecorded portion continues for approximately 12 seconds, and playback starts at the beginning of the next tune.
17. **TAPE NO. button (Deck I)**
    Press this button to select and playback a cassette from the sorting cartridge.
18. **PROGRAM button (Deck I)**
    Press this button to do program sequences of tunes.
19. **DOWN button (Deck I)**
    Use this button when programming.
20. **UP button (Deck I)**
    Use this button when programming.
21. **NEXT button (Deck I)**
    Use this button when programming.
22. **MEMORY button (Deck I)**
    Press this button to put in memory a programmed tune.
23. **SYNCHRO-RECORDING button**
    Used for recording.
    - Radio broadcast..........................**TUNER** button
    - External components.......................**AUX** button
    - Turntable...................................**PHONO** button
    - Compact disc....................................**CD** button
24. **◀◀ Fastforward/Back Skip button (BACK SKIP) (Deck I)**
    When this button is pressed during continuous play, the tape is fast-forwarded in the ◀◀ direction. When this button is pressed during programmed playback, the tape returns to the beginning of the tune and playback recommences.
25. **REV PLAY button (Deck I)**
    Press this button to play the cassette side facing inwards (side B of cassettes in the sorting cartridge).
26. **PLAY button (Deck I)**
    Press this button to play the cassette side facing outwards (side A of cassettes in the sorting cartridge).
27. **▶▶ Fastforward/Forward Skip button (FWD SKIP) (Deck I)**
    When this button is pressed during continuous play, the tape is fast-forwarded in the ▶▶ direction. When this button is pressed during programmed playback, the tune is interrupted, and playback restarts at the beginning of the next programmed tune.





28. STOP button (Deck I)
For stopping tape transport.

29. PAUSE button (Deck I)
Temporarily halts tape transport.

30. SYNCHRO DUBBING button
Press this button to dub a tape in deck I onto deck II.
- For normal speed dubbing.....NORMAL SPEED
- For high speed dubbing................HIGH SPEED

31. EJECT button (Deck II)
Used to open the cassette holder.

32. Fast forward/MS button (◀◀/MS) (Deck II)
Fast-forwards a tape in the (◀◀) direction. When this button is pressed together with the PLAY or REV PLAY button during playback, playback restarts at the beginning of the tune currently being played or at the beginning of the next tune. (MS)

33. REV PLAY button (◀) (Deck II)
Plays the reverse side of a tape.

34. PLAY button (▶) (Deck II)
Plays a tape.

35. Fast forward/MS button (▶▶/MS) (Deck II)
Fast-forwards a tape in the (▶▶) direction. When this button is pressed together with the PLAY or REV PLAY button during playback, playback restarts at the beginning of the tune currently being played or at the beginning of the next tune. (MS)

36. STOP button (Deck II)
For stopping tape transport.

37. PAUSE button (Deck II)
Temporarily halts tape transport.
* This button operates only during playback or recording. Press the STOP button when halting the fast-forwarding or rewinding of a tape.

38. REC MUTE button (Deck II)
Depressing this button will suppress the input signals, thereby enabling blank recording on the tape.

39. REVERSE MODE selector (Deck II)
Selects Normal(⇌),Reverse(⊃)and Continuous (↻) modes.

40. PROGRAM indicator (Deck I)
This indicator displays in numerals the order of the memorized program.

41. TAPE NO. indicator (Deck I)
This indicator dsiplays in numerals the number of the cassette programmed by the tape no. button.

42. Tape SIDE indicator (Deck I)
Indicates the playing side of the selected cassette.

43. MUSIC NO. indicator (Deck I)
Indicates the number of the programmed tune.

44. Load indicator (Deck I)
This indicator lights when the sorting cartridge is moving. When the cartridge stops moving the indicator goes out. Press the PLAY button to commence playback.

45. MS indicator (Deck I)
This indicator flashes while the programmed tune is being selected. The indicator goes out when selection is completed and the unit is ready to begin playback.

46. PLAY indicator (Deck I)
This indicator flashes during playback. When the unit is not playing the light goes out.
* This indicator also flashes in the ◀◀ and ▶▶ fast forward directions.

47. REC/PLAY jack
Connect to the amplifier's REC/PLAY jack.

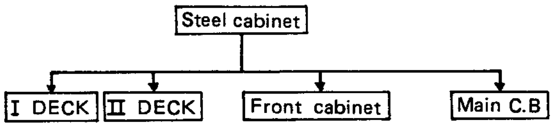
48. CONTROL jack
Used for the VX system and connected to the amplifier's control jack.

49. Remote control jack (REMOTE)
Connects to the AIWA RC-R77A wireless remote control unit.

50. AC cord

51. AC VOLTAGE selector switch (H model only)

DISASSEMBLY INSTRUCTIONS


Steel cabinet
I DECK
II DECK
Front cabinet
Main C.B

1. Removing Steel Cabinet

1) Remove the 5 screws.

2. Removing I DECK (Soating Mechanism)

1) Remove the 5 screws and rack holder. (See Figure-1)

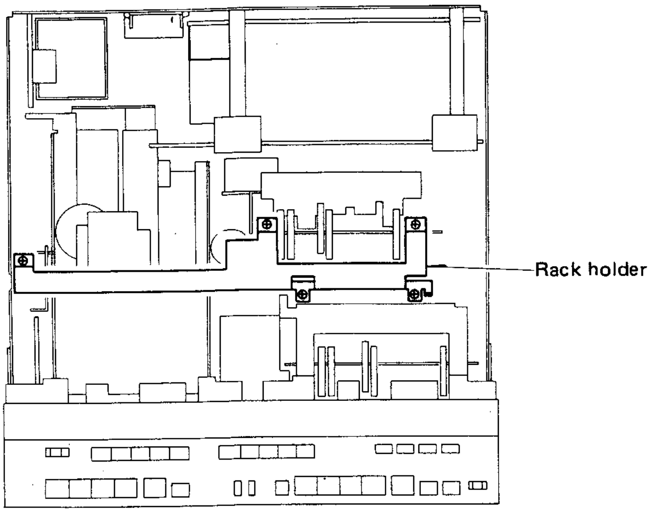

Rack holder

Fig-1

2) Remove the 2 screws to lift up the mechanism.(See Figure-2)

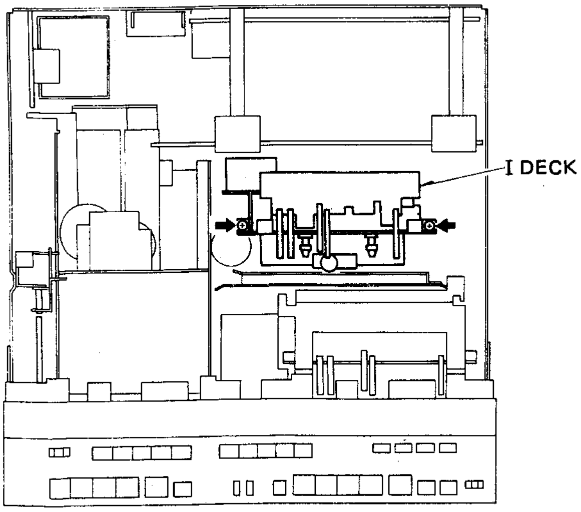


Fig-2

Independent checking method of deck I

In case the mechanical check of the deck I is performed independently after the deck I has been detached from the unit, carry out the check in the following order.

(1) Mount a tape onto the mechanism in the power supply off state.

(2) Turn the power supply on while the CO switch is turned on manually. (See Figure-3)

(3) Detach hands from the CO switch.

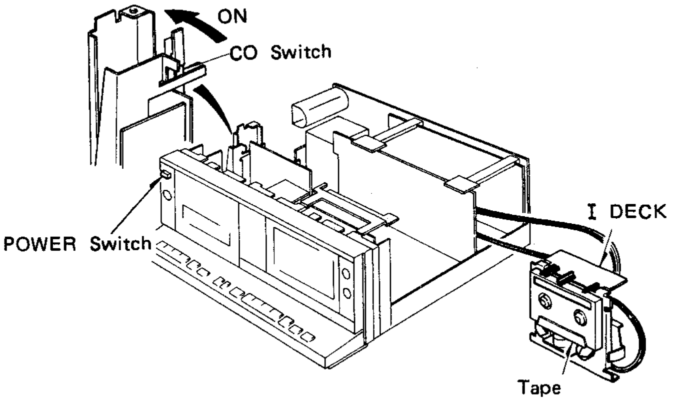

ON
CO Switch
I DECK
POWER Switch
Tape

Fig-3

3. Removing II DECK

1) Loading of the cassette will be started when the power supply is turned on and the PLAY button of deck I is pressed. Therefore, the power supply should be cut off when the Cassette box assembly has been mounted onto the mechanism.

2) Remove the 5 screws. (See Figure-4)

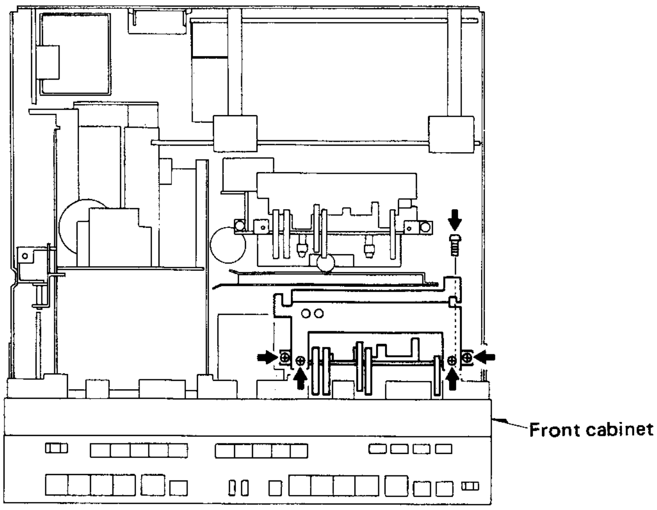

Front cabinet

Fig-4

3) Open the Cassette lid in the direction of the arrow. (See Figure-5)

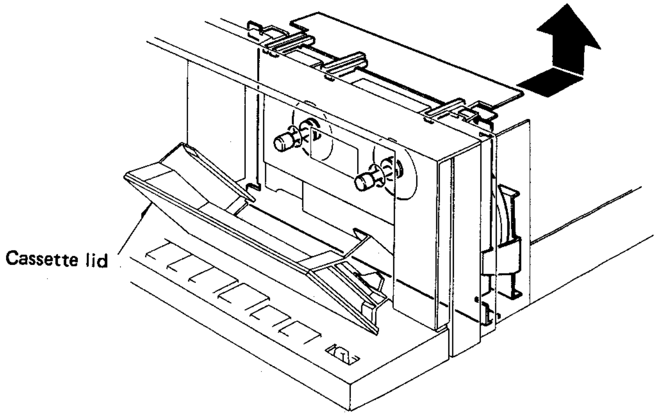

Cassette lid

Fig-5

4. Removing Main C.B

1) Push the cassette holder to have the cassette unloaded. (See Figure-6)

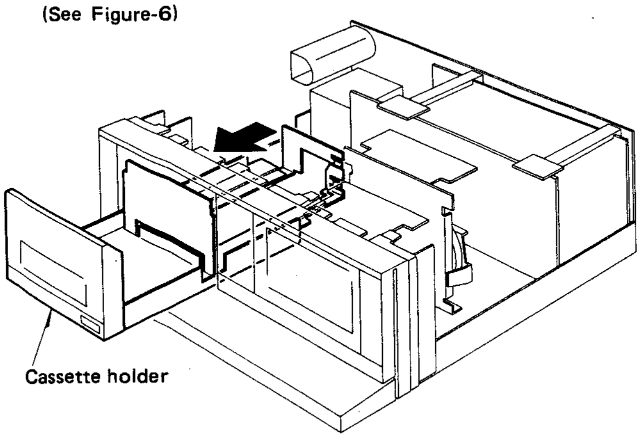


Fig-6

2) Remove the screw of the remote control circuit board. (See Figure-7)

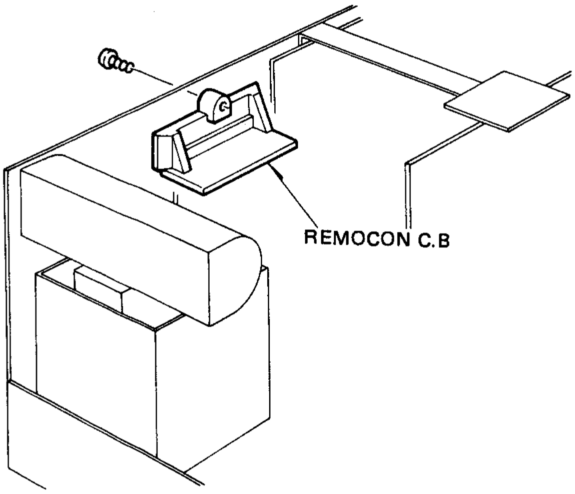


Fig-7

3) Remove the 4 screws and 2 rivets to lift up the circuit board in the direction of the arrow. (See Figure-8)

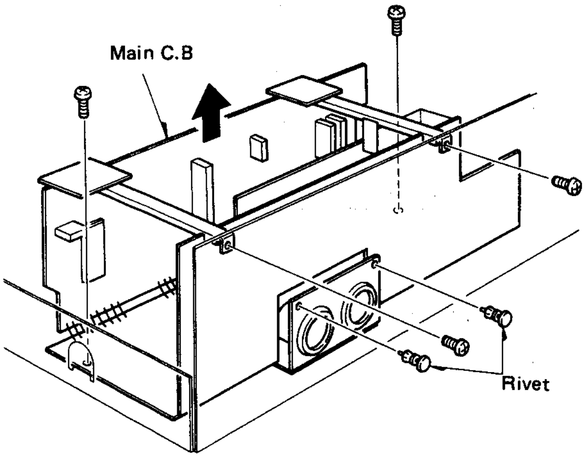


Fig-8

5. Removing Front Cabinet

1) Remove the 9 screws in the direction of the arrow. (See Figure-9)

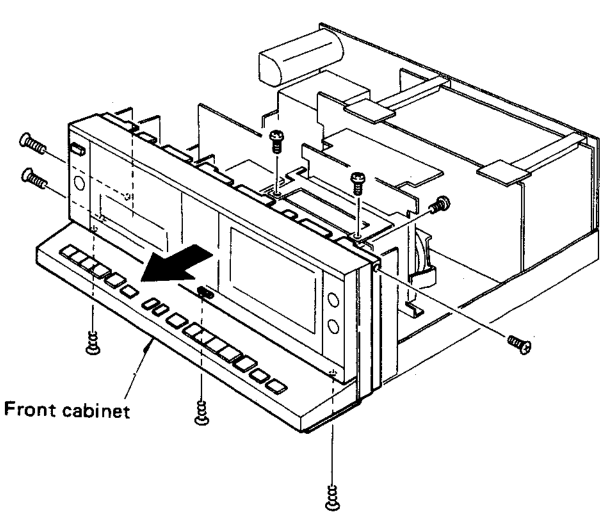


Fig-9

ONE POINT ADVICE

1. To Open Cassette Holder by Manual Operation

[illegible] The cassette holder is locked as soon as it is closed, so that it can not be opened even though pushed the rear side of the holder. (P.10 See Figure-11, 12)

[illegible] Removal of the rack holder causes the dolby switch C.B holder to decline. Therefore, fix the dolby switch C.B holder with a rubber band as illustrated, otherwise the dolby switches on the circuit board will be damaged by the movement of the cassette holder. (See Figure-10)

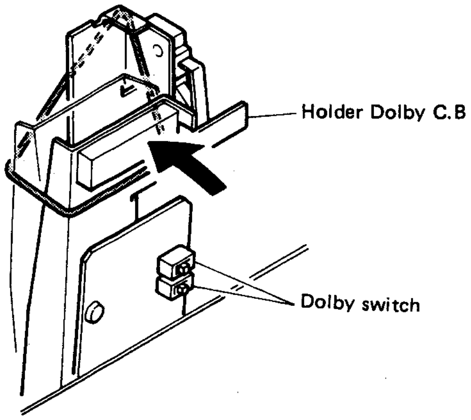


Fig-10

1) Push against the bank motor in the indicated direction (See Figure-11)

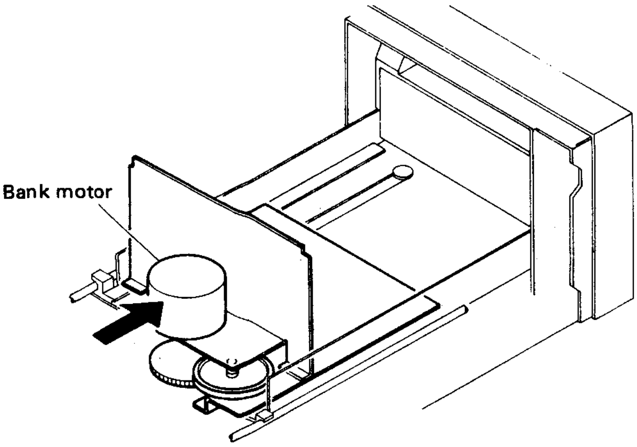


Fig-11

2) Or, push the rear side of the cassette holder, unlocking the hook of the chassis C.B Ass'y . (See Figure-12)

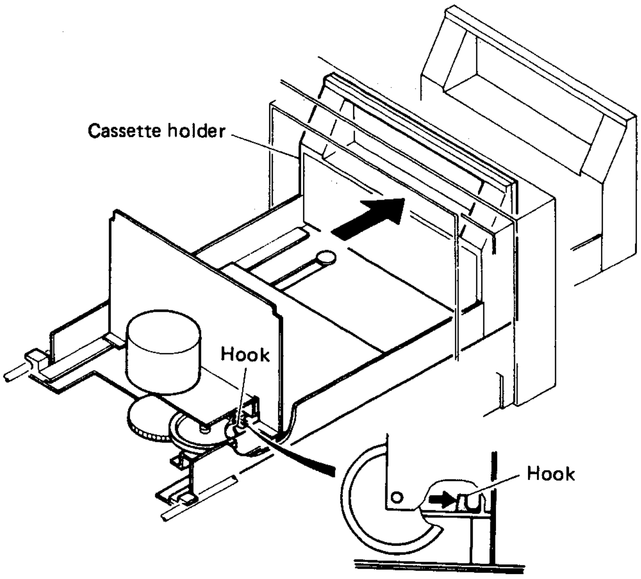

Cassette holder
Hook
Hook

Fig-12

2. Wire Treatment after Service

In case the wiring has not been performed properly, sorting is not carried out normally. Therefore, the wiring shoulg be performed in accordance with the Fig. below. (See Figure-13)

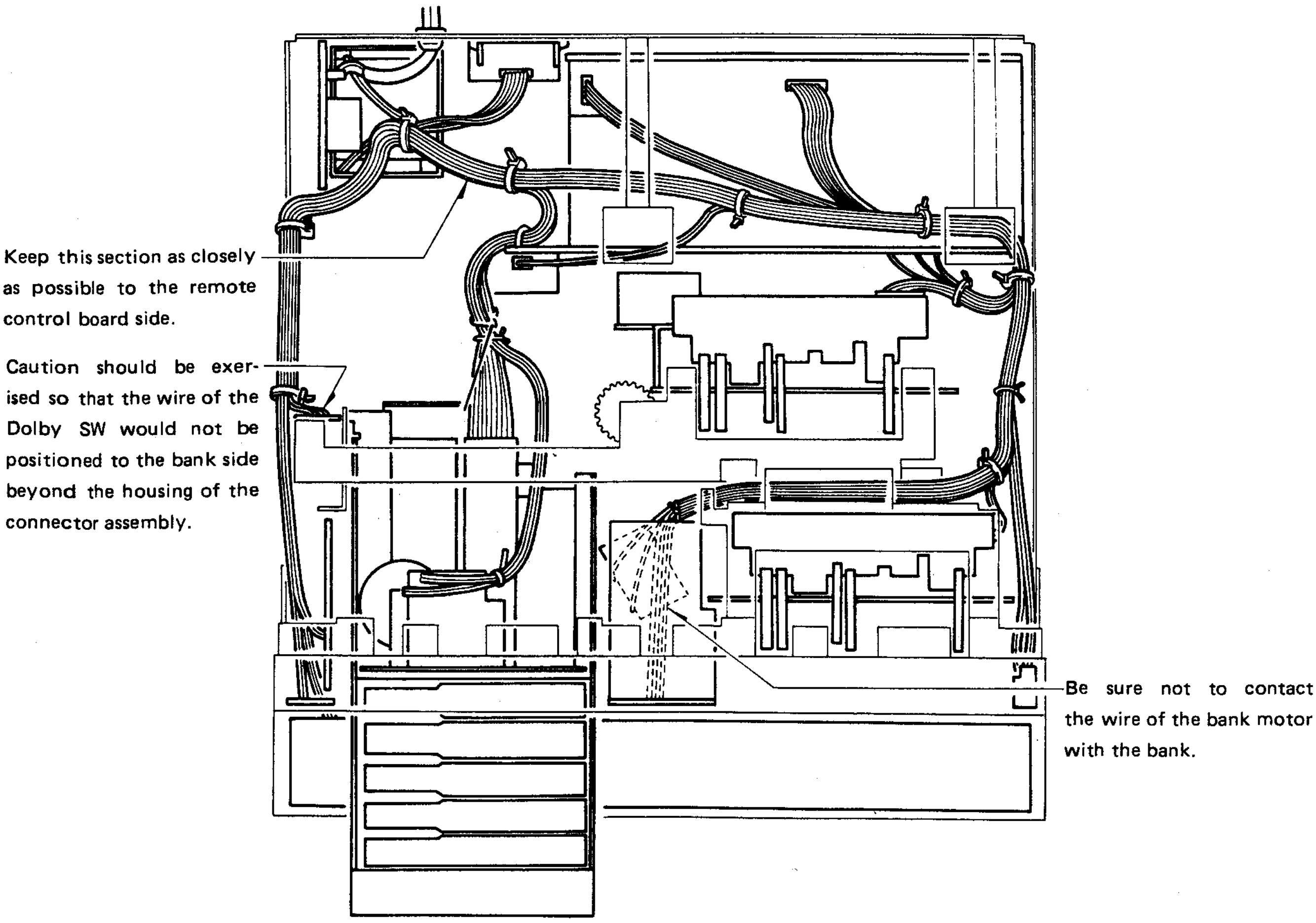

Keep this section as closely as possible to the remote control board side.
Caution should be exerised so that the wire of the Dolby SW would not be positioned to the bank side beyond the housing of the connector assembly.
Be sure not to contact the wire of the bank motor with the bank.

Fig-13

ELECTRICAL MAIN PARTS LIST

- ⋆ -mark means less required items and availabilities may be limited.
- +++ mark denotes a component of assembled part which part code is represented by a previonsly stated component.

CAPACITORS	COILS	FUSE
No mark, U, UF: µF	MMH: mH	MMA:mA
P, PF : pF	UH : µH	

Ref.No.	Part.No.	Description
=== IC ===		
	87-020-454	IC,DM6851
	82-197-642	IC,HD38702A33
	82-104-601	IC,HD38702A37
	87-020-028	IC,IR2E27A
	87-020-261	IC,LA6358S
	82-110-640	IC,LC6523C-798,A
	82-110-641	IC,LC6523C-799,B
	82-110-643	IC,LC6402G-1959
	87-020-140	IC,L78M12
	87-020-553	IC,M5201
	87-020-157	IC,M5210L
	87-027-895	IC,M5218L
	87-027-909	IC,M54523P
	87-027-656	IC,TC4066BP
	87-027-827	IC,TC4069UBP
	87-020-079	IC,TD62555S
	87-027-538	IC,UPD4069
=== TRANSISTOR ===		
	89-110-155	TRANSISTOR,2SA1015,GR
	89-113-460	TRANSISTOR,2SA1346
	89-113-584	TRANSISTOR,2SA1358Y
	89-108-854	TRANSISTOR,2SA885 R
	89-109-521	TRANSISTOR,2SA952K
	89-318-155	TRANSISTOR,2SC1815,GR
	89-318-156	TRANSISTOR,2SC1815,BL
	89-320-011	TRANSISTOR,2SC2001K
	89-327-855	TRANSISTOR,2SC2785E
	89-411-110	TRANSISTOR,2SD1111
	89-411-530	TRANSISTOR,2SD1153
	89-412-753	TRANSISTOR,2SD1275
	89-412-763	TRANSISTOR,2SD1276QP
	89-413-023	TRANSISTOR,2SD1302ST
=== MAIN CIRCUIT BOARD SECTION ===		
PCB-A	*	MAIN CIRCUIT BOARD
C3	* 87-018-123	CAP,CERA-SOL SS 220P
C4	* 87-018-123	CAP,CERA-SOL SS 220P
C7	* 87-015-954	CAP,ELECT LL 10-16V
C8	* 87-015-954	CAP,ELECT LL 10-16V
C11	* 87-018-047	CAP,CERA-SOL S 0.01Y/16
C53	* 87-018-126	CAP,CERA-SOL SS 390P
C54	* 87-018-126	CAP,CERA-SOL SS 390P
C55	* 87-015-954	CAP,ELECT LL 10-16V
C56	* 87-015-954	CAP,ELECT LL 10-16V
C59	* 87-018-134	CAP,CERA-SOL SS 0.01
C143	* 87-010-260	CAP,ELECT 47-25V SME
C191	* 87-018-132	CAP,CERA-SOL SS 2200P
C192	* 87-018-132	CAP,CERA-SOL SS 2200P
C241	* 87-018-134	CAP,CERA-SOL SS 0.01
C242	* 87-018-102	CAP,CERA-SOL SS6.8P
C244	* 87-018-119	CAP,CERA-SOL SS 100P
C244	* 87-018-134	CAP,CERA-SOL SS 0.01
C247	* 87-018-134	CAP,CERA-SOL SS 0.01
C268	* 87-018-134	CAP,CERA-SOL SS 0.01
C283	* 87-018-102	CAP,CERA-SOL SS6.8P
C285	* 87-018-119	CAP,CERA-SOL SS 100P
C285	* 87-018-134	CAP,CERA-SOL SS 0.01
C287	* 87-018-105	CAP,CERA-SOL SS 12P
C325	* 87-018-203	CAP,CERA-SOL 8200P
C328	* 87-014-063	CAP,PP 1800P
C505	* 87-018-134	CAP,CERA-SOL SS 0.01
C550	* 87-018-134	CAP,CERA-SOL SS 0.01
C709	* 87-010-429	CAP,ELECT,SME 680-16V
C710	* 87-010-429	CAP,ELECT,SME 680-16V
C711	* 87-010-429	CAP,ELECT,SME 680-16V
C712	* 87-010-429	CAP,ELECT,SME 680-16V
C714	* 87-018-134	CAP,CERA-SOL SS 0.01
C715	* 87-018-134	CAP,CERA-SOL SS 0.01
C716	* 87-018-134	CAP,CERA-SOL SS 0.01
C717	* 87-018-134	CAP,CERA-SOL SS 0.01
C719	* 87-018-131	CAP,CERA-SOL SS 1000P
D141	87-020-110	DIODE 1SS177
D142	87-020-110	DIODE 1SS177
D143	87-020-110	DIODE 1SS177
D144	87-020-110	DIODE 1SS177
D145	87-020-110	DIODE 1SS177
D146	87-020-110	DIODE 1SS177
D147	87-020-110	DIODE 1SS177
D171	87-027-702	DIODE,ZENER HZ6C2L
D214	87-020-110	DIODE 1SS177
D281	87-020-110	DIODE 1SS177
D321	87-020-110	DIODE 1SS177
D351	87-020-110	DIODE 1SS177
D352	87-020-025	DIODE 2B4B41,LC-2
D353	87-020-123	DIODE DS446
D354	87-020-123	DIODE DS446
D356	87-027-365	DIODE S5277B
D357	87-020-123	DIODE DS446
D401	87-020-110	DIODE 1SS177
D402	87-020-110	DIODE 1SS177
D403	87-020-110	DIODE 1SS177
D404	87-020-110	DIODE 1SS177
D405	87-020-110	DIODE 1SS177
D406	87-020-110	DIODE 1SS177
D407	87-020-110	DIODE 1SS177
D408	87-020-110	DIODE 1SS177
D409	87-020-110	DIODE 1SS177
D410	87-020-110	DIODE 1SS177
D411	87-020-110	DIODE 1SS177
D412	87-020-110	DIODE 1SS177
D451	87-027-405	DIODE,ZENER RD2.2EB
D452	87-020-110	DIODE 1SS177
D453	87-020-110	DIODE 1SS177
D454	87-027-332	DIODE,ZENER HZ6B1L
D455	87-027-332	DIODE,ZENER HZ6B1L
D456	87-020-110	DIODE 1SS177
D457	87-027-332	DIODE,ZENER HZ6B1L
D458	87-027-332	DIODE,ZENER HZ6B1L
D459	87-020-110	DIODE 1SS177
D460	87-020-110	DIODE 1SS177
D461	87-027-332	DIODE,ZENER HZ6B1L
D522	87-020-110	DIODE 1SS177
D551	87-020-110	DIODE 1SS177
D553	87-020-110	DIODE 1SS177
D701	87-020-110	DIODE 1SS177
D702	87-020-123	DIODE DS446
D703	87-020-123	DIODE DS446
D704	87-020-123	DIODE DS446
D705	87-020-123	DIODE DS446
D706	87-020-110	DIODE 1SS177
D707	87-020-123	DIODE DS446
D708	87-020-123	DIODE DS446
D709	87-020-110	DIODE 1SS177
D710	87-020-110	DIODE 1SS177
D711	87-020-110	DIODE 1SS177
D712	87-020-110	DIODE 1SS177
D713	87-020-110	DIODE 1SS177
D714	87-020-123	DIODE DS446
D715	87-020-110	DIODE 1SS177
D716	87-020-123	DIODE DS446
D718	87-020-110	DIODE 1SS177
D719	87-020-110	DIODE 1SS177
D719	87-020-123	DIODE DS446
D720	87-020-110	DIODE 1SS177
D721	87-020-110	DIODE 1SS177
D722	87-020-110	DIODE 1SS177
D723	87-020-110	DIODE 1SS177
D724	87-020-110	DIODE 1SS177
D725	87-020-110	DIODE 1SS177
D726	87-020-110	DIODE 1SS177
D727	87-020-110	DIODE 1SS177
D728	87-020-110	DIODE 1SS177
D729	87-020-110	DIODE 1SS177
D730	87-020-110	DIODE 1SS177
D731	87-020-110	DIODE 1SS177
D732	87-020-110	DIODE 1SS177
D733	87-020-110	DIODE 1SS177
D734	87-020-110	DIODE 1SS177
D810	87-020-110	DIODE 1SS177
⚠F1	87-035-358	FUSE T400MMA (E,K ONLY)
J701	82-198-607	JACK PLATE,ASSY 8P-2 (J701-1 CONTROL)
	+++	JACK PLATE,ASSY 8P-2 (J701-2 RE/PLAY)
L171	* 82-196-603	COIL,TRAP,100K
L172	* 82-196-603	COIL,TRAP,100K
L173	* 82-196-603	COIL,TRAP,100K
L174	* 82-196-603	COIL,TRAP,100K
L175	* 87-003-129	COIL 6.8MMH J
L176	* 87-003-129	COIL 6.8MMH J
L177	* 87-003-124	COIL 2.7MMH J
L178	* 87-003-124	COIL 2.7MMH J
L321	* 82-141-620	COIL OSC 100K
L801	* 87-003-136	MICRO INDUCTOR 47UH
L802	* 82-196-649	COIL OSC LC6502C
R359	* 87-029-366	RES,FUSIBLE 1/2W-4.7
R763	* 87-025-406	RES,MF 68 1W
R764	* 87-025-406	RES,MF 68 1W
R781	* 87-025-406	RES,MF 68 1W
R782	* 87-025-406	RES,MF 68 1W
⚠R791	87-029-019	RES,FUSIBLE 2.2 1/2W (EXCEPT H,C)
⚠R792	87-029-019	RES,FUSIBLE 2.2 1/2W (EXCEPT H,C)
RA701	* 82-104-617	RES,ARRAY 47K-8P
RA702	* 82-146-612	RES,ARRAY 47K-10P
RA703	* 82-110-692	RES,ARRAY 47K
RA704	* 82-110-690	RES,ARRAY 5P-10K
RA705	* 82-110-694	RES,ARRAY 3.9K
RA706	* 82-110-693	RES,ARRAY 10K
RY551	* 87-045-237	RELAY,GSA-237P 12VDC
RY552	* 87-045-237	RELAY,GSA-237P 12VDC
RY553	* 87-045-256	RELAY,12V,G2V-2
SFR1	* 87-021-861	SFR 2.2K
SFR2	* 87-021-861	SFR 2.2K
SFR3	* 87-021-865	SFR 22K
SFR4	* 87-021-865	SFR 22K
SFR5	* 87-021-865	SFR 22K
SFR6	* 87-021-865	SFR 22K
SFR51	* 87-021-861	SFR 2.2K
SFR52	* 87-021-861	SFR 2.2K
SFR53	* 87-021-864	SFR 10K
SFR54	* 87-021-864	SFR 10K
SFR321	* 87-021-868	SFR 100K
SFR322	* 87-021-868	SFR 100K
SFR323	* 87-021-868	SFR 100K
SFR324	* 87-021-868	SFR 100K
SFR171	* 87-021-742	SFR 10K
SFR172	* 87-021-742	SFR 10K
SFR173	* 87-021-742	SFR 10K
SFR174	* 87-021-742	SFR 10K
=== DOLBY CIRCUIT BOARD SECTION ===		
	87-020-132	DOLBY UNIT ASSY HA12058J(W/PCB-B)
=== TR CIRCUIT BOARD SECTION ===		
PCB-C	*	TR CIRCUIT BOARD
=== DOLBY SW 1 CIRCUIT BOARD SECTION ===		
PCB-E	*	DOLBY SW 1 CIRCUIT BOARD
S1	82-198-602	ROTARY- SW (DOLBY B-C NR)
=== VOLUME CIRCUIT BOARD SECTION ===		
PCB-F	*	VOLUME CIRCUIT BOARD
VR1	82-104-641	VOLUME 10K (RECORD LEVEL)
=== KEY CIRCUIT BOARD SECTION ===		
PCB-G	82-110-631	KEY CIRCUIT BOARD
D1	87-020-110	DIODE 1SS177
D2	87-020-110	DIODE 1SS177
D3	87-020-110	DIODE 1SS177
D4	87-020-110	DIODE 1SS177
D5	87-020-110	DIODE 1SS177
D6	87-020-110	DIODE 1SS177
D7	87-020-110	DIODE 1SS177
D8	87-020-110	DIODE 1SS177
D9	87-020-110	DIODE 1SS177
D10	87-020-110	DIODE 1SS177
D11	87-020-110	DIODE 1SS177
D12	87-020-110	DIODE 1SS177
D13	87-020-110	DIODE 1SS177
D14	87-020-110	DIODE 1SS177
D15	87-020-110	DIODE 1SS177
D16	87-020-110	DIODE 1SS177
D17	87-020-110	DIODE 1SS177
D18	87-020-110	DIODE 1SS177
D19	87-020-110	DIODE 1SS177
D20	87-020-110	DIODE 1SS177
D21	87-020-110	DIODE 1SS177
D22	87-020-110	DIODE 1SS177
D23	87-020-110	DIODE 1SS177
D24	87-020-110	DIODE 1SS177
D25	87-020-110	DIODE 1SS177
D26	87-020-110	DIODE 1SS177
D29	87-020-110	DIODE 1SS177
D30	87-020-110	DIODE 1SS177
D31	87-020-110	DIODE 1SS177
D32	87-020-110	DIODE 1SS177
D33	87-020-110	DIODE 1SS177
D34	87-020-110	DIODE 1SS177
D35	87-020-110	DIODE 1SS177
D36	87-020-110	DIODE 1SS177

Ref.No.	Part.No.	Description
D37	87-020-110	DIODE 1SS177
D38	87-020-110	DIODE 1SS177
D39	87-020-110	DIODE 1SS177
D60	87-020-110	DIODE 1SS177
D61	87-020-110	DIODE 1SS177
LED40	* 87-020-170	LED SLP477B (PAUSE)
LED41	* 87-020-168	LED SLP177B (NORMAL)
LED42	* 87-020-168	LED SLP177B (HIGH)
LED43	* 87-020-169	LED,SLP-277B (REV PLAY)
LED44	* 87-020-169	LED,SLP-277B (PLAY)
LED45	* 87-020-170	LED SLP477B (PAUSE)
LED46	* 87-020-168	LED SLP177B (REC MUTE)
LED47	* 87-020-168	LED SLP177B (TUNER)
LED48	* 87-020-168	LED SLP177B (PHONO)
LED49	* 87-020-168	LED SLP177B (AUX)
LED50	* 87-020-168	LED SLP177B (CD)
S1	87-031-771	TACT SW (PROGRAM)
S2	87-031-771	TACT SW (DOWN)
S3	87-031-771	TACT SW (UP)
S4	87-031-771	TACT SW (NEXT)
S5	87-031-771	TACT SW (MEMORY)
S6	87-031-771	TACT SW (NORMAL)
S7	87-031-771	TACT SW (HIGH)
S8	87-031-771	TACT SW (TAPE NO 1)
S9	87-031-771	TACT SW (TAPE NO 2)
S10	87-031-771	TACT SW (TAPE NO 3)
S11	87-031-771	TACT SW (TAPE NO 4)
S12	87-031-771	TACT SW (TAPE NO 5)
S13	87-031-771	TACT SW (BACK SKIP)
S14	87-031-771	TACT SW (REV PLAY)
S15	87-031-771	TACT SW (PLAY)
S16	87-031-771	TACT SW (FWD SKIP)
S17	87-031-771	TACT SW (STOP)
S18	87-031-771	TACT SW (PAUSE)
S19	87-031-771	TACT SW (TUNER)
S20	87-031-771	TACT SW (PHONO)
S21	87-031-771	TACT SW (AUX)
S22	87-031-771	TACT SW (CD)
S23	87-031-771	TACT SW (MS)
S24	87-031-771	TACT SW (REV PLAY)
S25	87-031-771	TACT SW (PLAY)
S26	87-031-771	TACT SW (MS)
S27	87-031-771	TACT SW (STOP)
S28	87-031-771	TACT SW (APUSE)
S29	87-031-771	TACT SW (REC MUTE)
S30	87-031-929	SLIDE SW (BLANK SKIP)
S31	87-031-724	SLIDE SW (DECK2, REVERSE MODE)
=== FL CIRCUIT BOARD SECTION ===		
PCB-H	*	FL CIRCUIT BOARD
C801	* 87-014-033	CAP,PP 100P
D801	87-020-110	DIODE 1SS177
D802	87-020-110	DIODE 1SS177
D803	87-027-332	DIODE,ZENER HZ6B1L
FL2	* 82-110-615	FL 5-BT 41ZK (DISPLAY)
S801	87-031-894	TACT SW (OPEN/CLOSE)
=== POWER SW CIRCUIT BOARD SECTION ===		
PCB-I	*	POWER SW CIRCUIT BOARD
S1	87-031-897	PUSH SW (POWER)

Ref.No.	Part.No.	Description
=== DOLBY SW 2 CIRCUIT BOARD SECTION ===		
PCB-J	*	DOLBY SW 2 CIRCUIT BOARD
S1	87-031-895	TACT SW (DOLBY-B)
S2	87-031-895	TACT SW (DOLBY-C)
=== SW2 CIRCUIT BOARD SECTION ===		
PCB-K	*	SW2 CIRCUIT BOARD
D4	87-020-110	DIODE 1S177
D4	87-020-110	DIODE 1SS177
S4	86-523-276	LEAF SW (CO SW)
=== COUNTER CIRCUIT BOARD SECTION ===		
PCB-L	*	COUNTER CIRCUIT BOARD
C651	* 87-014-033	CAP,PP 100P
D651	87-027-405	DIODE,ZENER RD2.2EB
D652	87-027-405	DIODE,ZENER RD2.2EB
D653	87-027-405	DIODE,ZENER RD2.2EB
D654	87-027-332	DIODE,ZENER HZ6B1L
FL1	* 82-198-601	FL,4ST-01ZSI 4DIGIT
=== LED CIRCUIT BOARD SECTION ===		
PCB-M	*	LED CIRCUIT BOARD
C601	* 87-015-968	CAP,ELECT SRE 4.7-16V
C602	* 87-015-968	CAP,ELECT SRE 4.7-16V
C603	* 87-015-965	CAP,ELECT 1-50 SRE
D624	87-020-110	DIODE 1SS177
LED601	* 87-027-543	LED,LN317GP (PEAK PROG. METER)
LED602	* 87-027-543	LED,LN317GP (PEAK PROG. METER)
LED603	* 87-027-543	LED,LN317GP (PEAK PROG. METER)
LED604	* 87-027-542	LED,LN217RP (PEAK PROG. METER)
LED605	* 87-027-542	LED,LN217RP (PEAK PROG. METER)
LED606	* 87-027-543	LED,LN317GP (PEAK PROG. METER)
LED607	* 87-027-543	LED,LN317GP (PEAK PROG. METER)
LED608	* 87-027-543	LED,LN317GP (PEAK PROG. METER)
LED609	* 87-027-542	LED,LN217RP (PEAK PROG. METER)
LED610	* 87-027-542	LED,LN217RP (PEAK PROG. METER)
LED621	* 87-027-542	LED,LN217RP (REC I)
LED622	* 87-027-542	LED,LN217RP (REC II)
LED623	* 87-020-399	LED,LN350GPH (▶)
LED625	* 87-020-399	LED,LN350GPH (◀)
LED626	* 87-027-542	LED,LN217RP (⊂⊃)
LED627	* 87-027-542	LED,LN217RP (↩)
LED628	* 87-027-542	LED,LN217RP (⇄)
LED629	* 87-027-543	LED,LN317GP (B-TYPE)
LED630	* 87-027-542	LED,LN217RP (C-TYPE)
⚠R630	87-029-089	RES,FUSIBLE 4.7 1/4W (U ONLY)
S601	86-992-604	PUSH SW (COUNTER RESET)
=== MOTOR CIRCUIT BOARD SECTION ===		
PCB-N	*	MOTOR CIRCUIT BOARD
M4	81-505-604	REEL MOTOR (BANKING MOTOR)
=== SW3 CIRCUIT BOARD SECTION ===		
PCB-O	*	SW3 CIRCUIT BOARD
D1	87-020-110	DIODE 1S177
D1	87-020-110	DIODE 1SS177
S1	86-523-277	LEAF SW (BO SW)
=== SENSOR 1 CIRCUIT BOARD SECTION ===		
PCB-P	*	SENSOR 1 CIRCUIT BOARD
CP1	* 82-141-622	PHOTO REFLECTOR SP1216

Ref No.	Part No.	Description
=== POWER CIRCUIT BOARD SECTION ===		
PCB-Q	*	POWER CIRCUIT BOARD
⚠C365	* 87-019-112	SPARK KILLER 0.01E
⚠NF1	* 87-030-090	NOISE FILTER
=== REMOCON CIRCUIT BOARD SECTION ===		
PCB-R	*	REMOCON CIRCUIT BOARD
J801	82-137-609	13P CONNECTOR SOCKET (REMOTE)
=== SW1 CIRCUIT BOARD SECTION ===		
PCB-S	*	SW1 CIRCUIT BOARD
D2	87-020-110	DIODE 1S177
D3	87-020-110	DIODE 1S177
D2	87-020-110	DIODE 1SS177
D3	87-020-110	DIODE 1SS177
S2	86-523-275	LEAF SW (BI SW)
S3	86-523-277	LEAF SW (GEAR SW)
=== DECK 1 CIRCUIT BOARD SECTION ===		
PCB-T	*	DECK 1 CIRCUIT BOARD
M1	87-045-235	MOTOR MMA6B2LW (DECK1)
S1	86-517-621	LEAF SW (ENA B)
S2	86-517-621	LEAF SW (ENA A)
S3	86-517-621	LEAF SW (CO)
S4	86-517-621	LEAF SW (MT)
S5	86-517-621	LEAF SW (CAST)
S6	87-031-874	LEAF SW (DECK1,DIRECT)
SFR1	* 87-021-824	SFR 10K(C) (DECK1)
SFR2	* 87-021-825	SFR 22K (DECK1)
SOL1	* 86-517-611	SOLENOID 2ME-1A (FR,DECK1)
SOL2	* 86-517-612	SOLENOID 2ME-1B (PLAY,DECK1)
=== DECK 2 CIRCUIT BOARD SECTION ===		
PCB-U	*	DECK 2 CIRCUIT BOARD
M2	87-045-235	MOTOR MMA6B2LW (DECK2)
S1	86-517-621	LEAF SW (ENA B)
S2	86-517-621	LEAF SW (ENA A)
S3	86-517-621	LEAF SW (CO)
S4	86-517-621	LEAF SW (MT)
S5	86-517-621	LEAF SW (CAST)
S6	87-031-874	LEAF SW (DECK2,DIRECT)
SFR1	* 87-021-824	SFR 10K(C) (DECK2)
SFR2	* 87-021-825	SFR 22K (DECK2)
SOL1	* 86-517-611	SOLENOID 2ME-1A (FR,DECK2)
SOL2	* 86-517-612	SOLENOID 2ME-1B (PLAY,DECK2)
=== TIMER CIRCUIT BOARD SECTION ===		
PCB-V	*	TIMER CIRCUIT BOARD
D1	87-020-110	DIODE 1SS177
S1	82-110-646	ROTARY SW (TIMER)
=== CP 1 CIRCUIT BOARD SECTION ===		
PCB-W	*	CP CIRCUIT BOARD
CP1	* 87-020-457	PHOTO SENSOR NJL-5144L
=== CP 2 CIRCUIT BOARD SECTION ===		
PCB-X	*	CP CIRCUIT BOARD
CP1	* 87-020-457	PHOTO SENSOR NJL-5144L

Ref No.	Part No.	Description
=== MISCELLANEOUS ===		
⚠	* 87-034-962	AC CORD,H50 (H ONLY)
⚠	* 87-034-994	AC CORD (U,C ONLY)
⚠	* 82-788-674	AC CORD (E ONLY)
⚠	* 87-034-708	AC CORD (K ONLY)
⚠	* 87-085-184	AC CORD BUSHING D (H,U,C ONLY)
⚠	* 87-085-185	AC CORD BUSHING (E,K ONLY)
M3	81-505-604	REEL MOTOR (LOADING MOTOR)
⚠PT1	82-110-602	TRANSFORMER PT,H
⚠PT1	* 82-110-606	TRANSFORMER PT (U,C ONLY)
⚠PT1	* 82-110-603	TRANSFORMER PT (E ONLY)
⚠PT1	* 82-110-604	TRANSFORMER PT (K ONLY)
RPH	87-046-259	RPH HD425821RVJ (DECK1)
RPH	87-046-259	RPH HD425821RVJ (DECK2)
⚠S3	87-031-586	ROTRY SW (VOLTAGE SELECTOR) (H ONLY)

⚠ Safety component symbol

This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

IC handling precaution

The IC's construction makes this part susceptible to damage by static electricity and so take sufficient care in regard to following articles.

1. Need to be put on conductive sheet, to be put in a metallic box and to be wrapped by aluminium foil for transportation and deposit.
2. To use solder iron less than 40W (less than 260°C) of power consumption for soldering. But do not overheat more than 10 second.
3. Do not perform a conductivity test with a tester, etc. Refer to the circuit voltages of each part.

Note; Combination Circuit Board

The parts on the electrical parts list which are indicated by an asterisk (*) are supplied as one single combined circuit board. Therefore, they will no be supplied separately. If this becomes necessary, please order the entire circuit board.

Combination circuit board A82-110-617

82-110-618	PCB-R
82-110-619	PCB-H
82-110-620	PCB-M
82-110-621	PCB-L
82-110-622	PCB-V
82-110-623	PCB-E
82-110-624	PCB-F
82-110-625	PCB-I
82-110-626	PCB-A
82-110-627	PCB-A
82-110-628	PCB-A
82-110-629	PCB-C

Combination circuit board B82-110-608

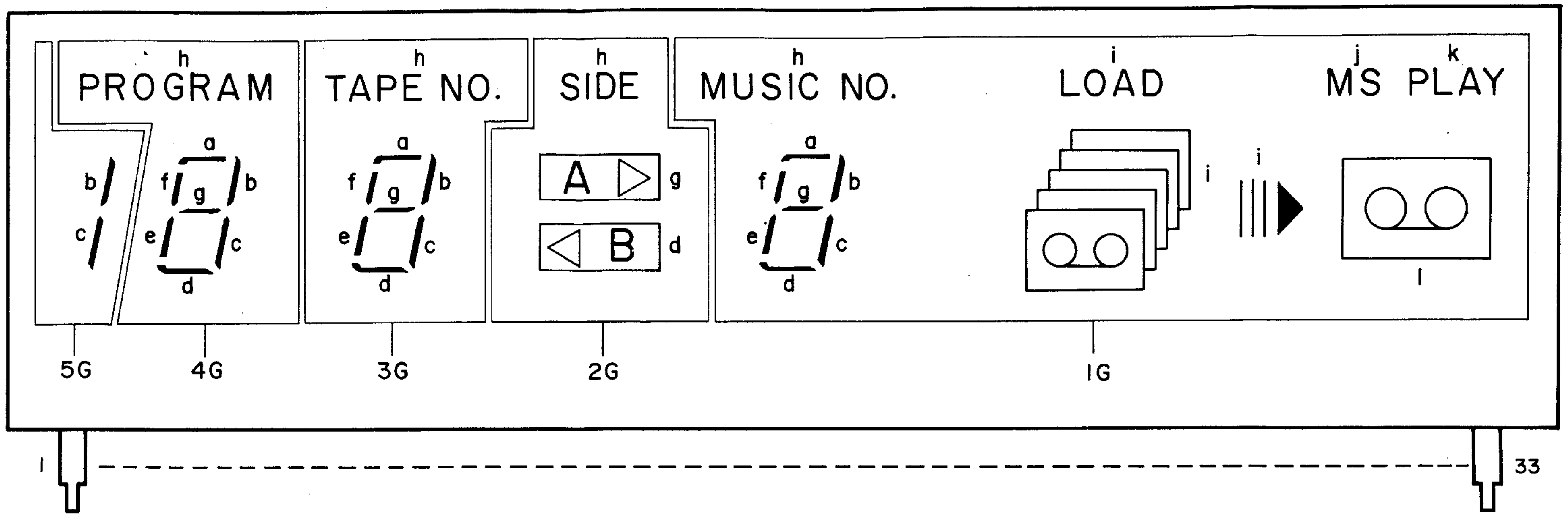
82-110-609	PCB-S
82-110-610	PCB-N
82-110-611	PCB-J
82-110-612	PCB-K
82-110-613	PCB-O
82-110-614	PCB-P

Combination circuit board C86-517-601

86-517-602	PCB T, U
86-517-603	PCB W, X

FL 5BT41ZK

GRID ASSIGNMENT

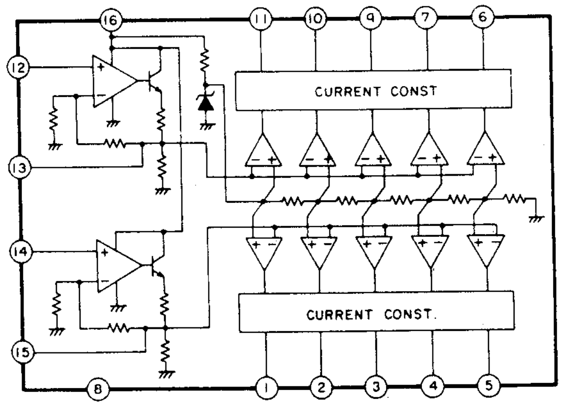


PIN CONNECTION

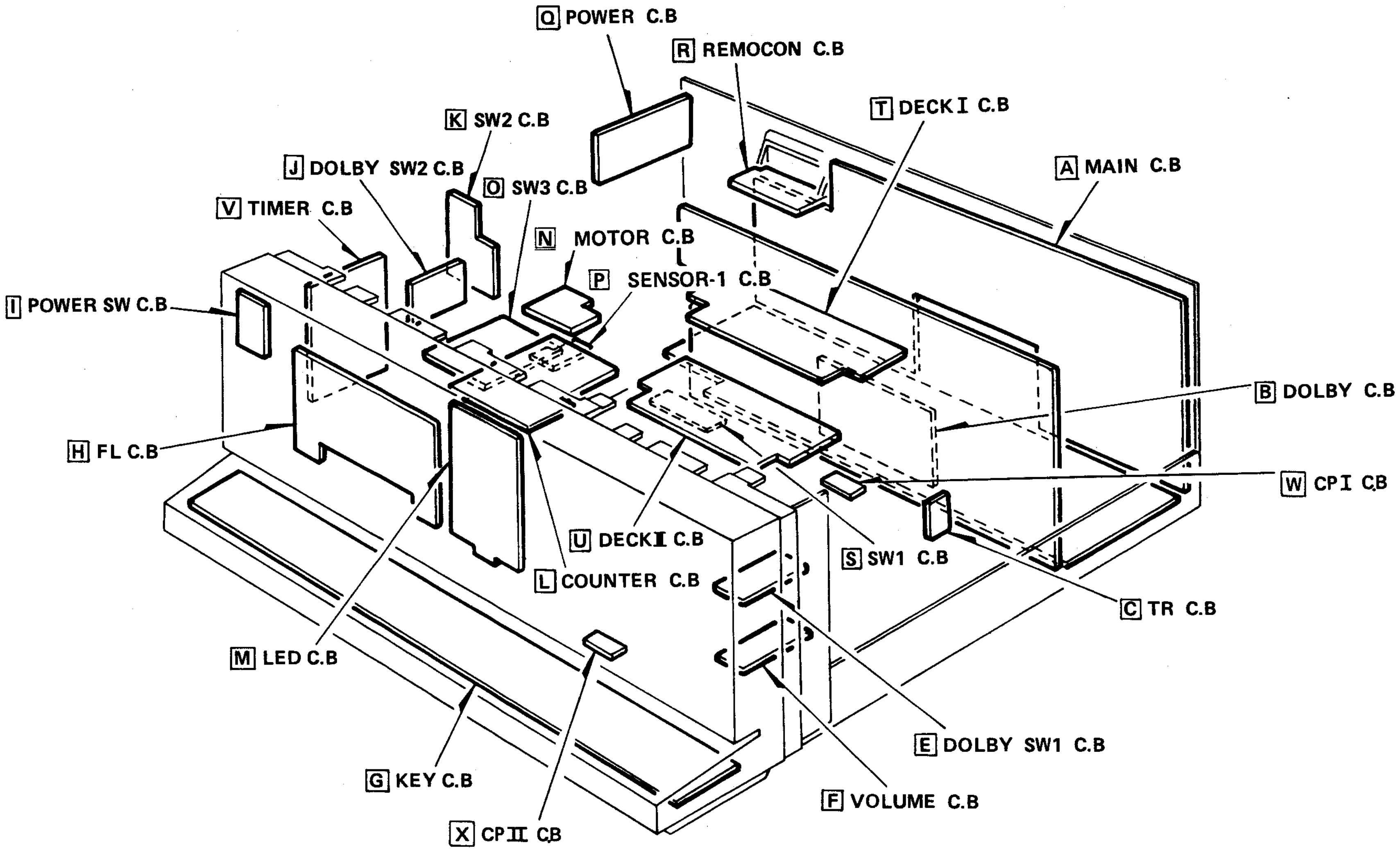
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
F	NP	5G	h	4G	a	b	c	3G	d	e	f	2G	g	NP	NP	NP	1G	NP	NP	NP	NP	NP	NP	1G	NP	l	k	j	i	1G	NP	F

IC BLOCK DIAGRAM

IR2E27A



CIRCUIT BOARD LOCATION VIEW

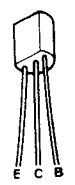

Q POWER C.B
R REMOCON C.B
K SW2 C.B
T DECK I C.B
J DOLBY SW2 C.B
O SW3 C.B
A MAIN C.B
V TIMER C.B
N MOTOR C.B
P SENSOR-1 C.B
I POWER SW C.B
B DOLBY C.B
H FL C.B
W CP I C.B
U DECK II C.B
S SW1 C.B
L COUNTER C.B
C TR C.B
M LED C.B
E DOLBY SW1 C.B
G KEY C.B
F VOLUME C.B
X CP II C.B

NOTES:

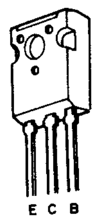
1) The voltage is the reference value measured with a tester (20 k-ohms/V DC) when there are no signals.
An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.
2) Resistors with no designation have a rated power of 1/8W and a tolerance of ±5%.
3) Capacitors with no designation have a dielectric strength of less than 50WV.
4) The only capacitor tolerance indicated are ±5% (J) and ±10% (K).
5) Ceramic capacitor symbols:
   - ⊣⊢ For temperature compensation (SL)
   - ⊣⊢ High dielectric constant system (YY)
   - ⊣⊢ High dielectric constant system (YW, YP, YZ)
   - ⊣⊢ Semiconductor ceramic
   - ⊣⊢ For temperature compensation (SH)
6) Explanation of symbols
   - Ⓜ Mylar capacitor
   - Ⓐ Aluminum solid capacitor
   - (PP) Polypropylene film capacitor
   - (BP) Bi-polarized capacitor
   - (LL) Low-leakage capacitor
   - Ⓣ Tantalum capacitor
   - Ⓢ Styrol capacitor
   - Printed resistor
   - Fuse resistor

⚠ Safety component symbol
This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

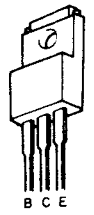
- This schematic diagram is subject to change without notice in the interests of improved performance.



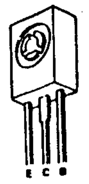
2SA952
2SA1015
2SC1815
2SC2001
2SD1111
2SD1302



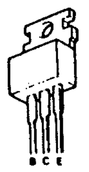
2SA1358



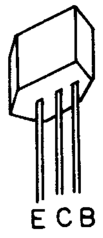
2SD1275
2SD1276



2SA855

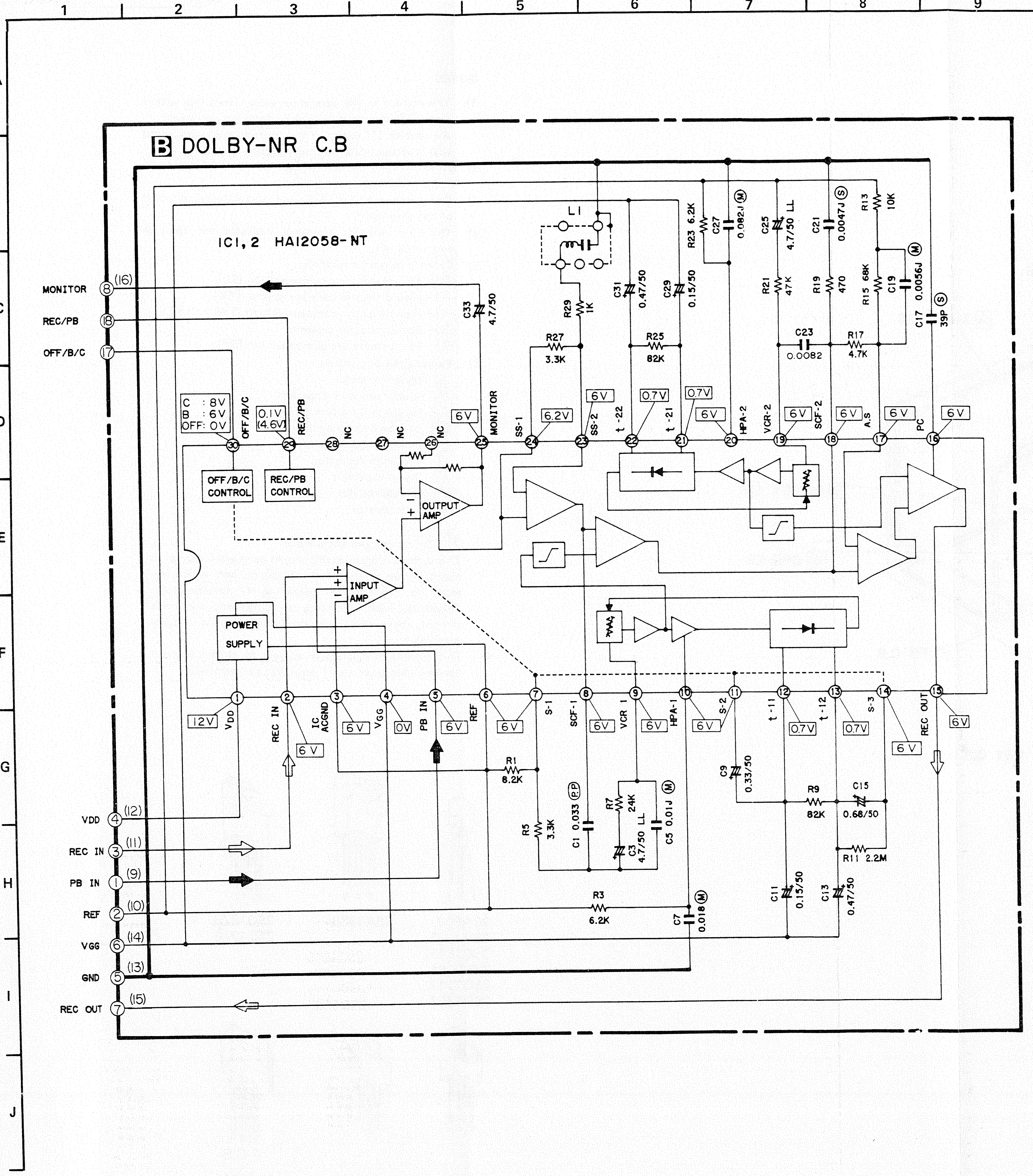


2SD1153

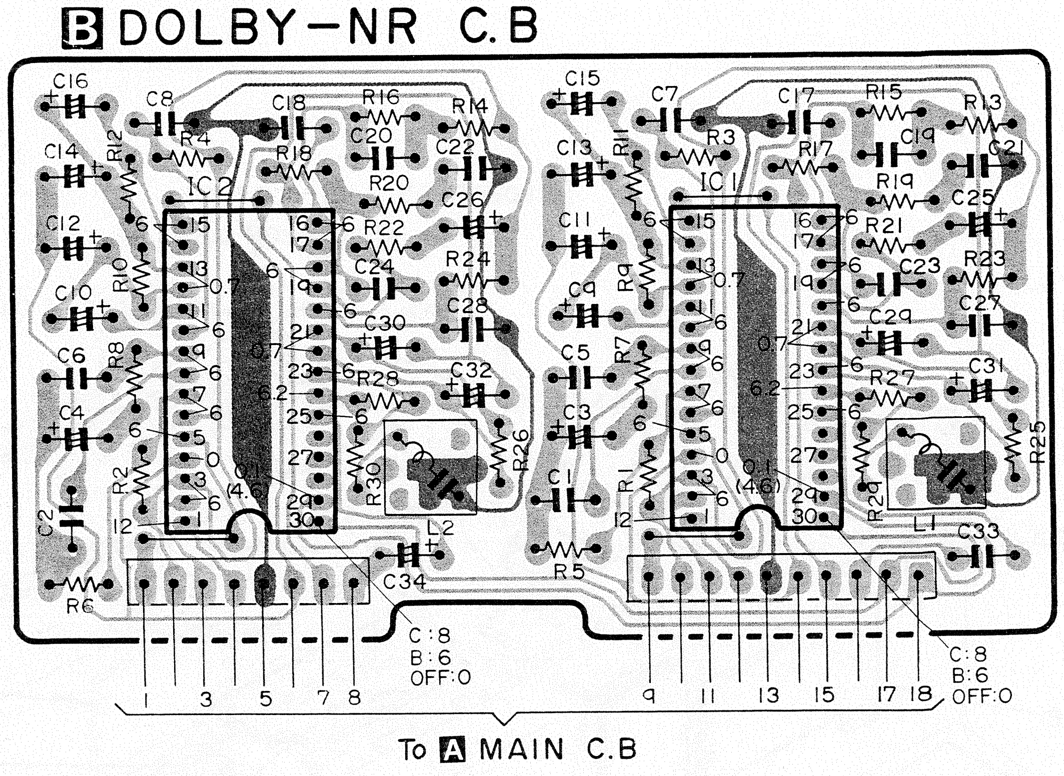


2SA1346
2SC2785

SCHEMATIC DIAGRAM (FX-A770)

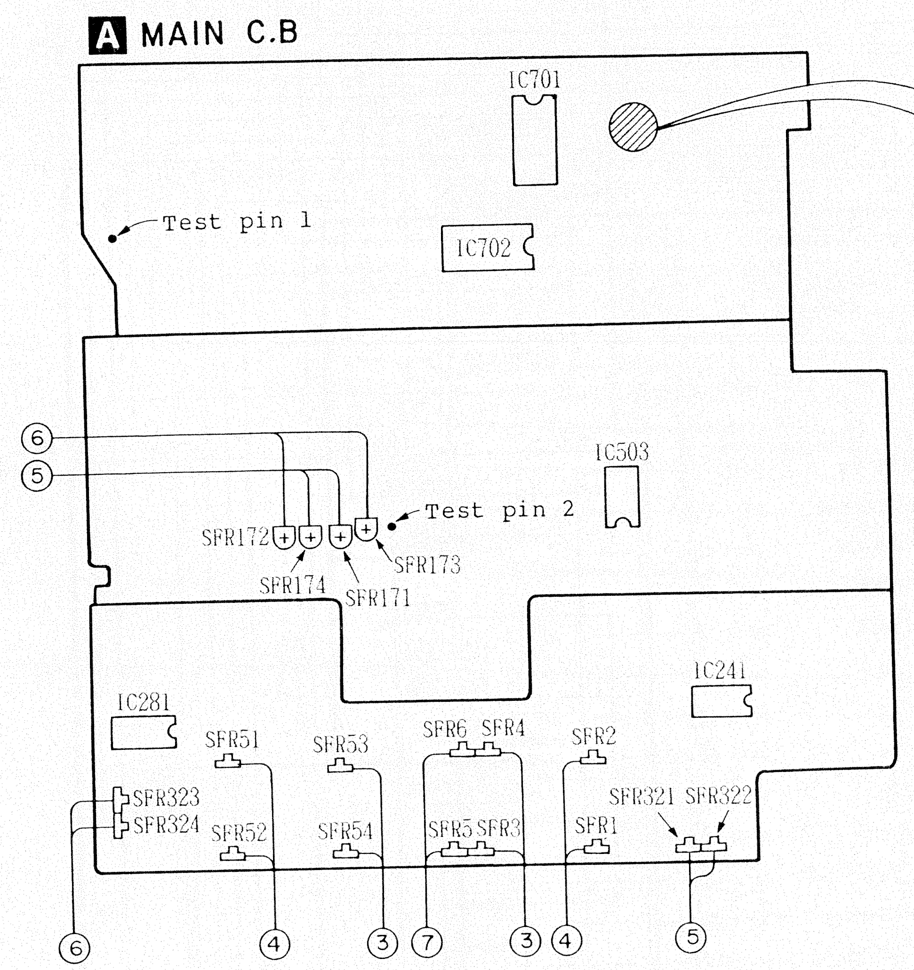

B DOLBY-NR C.B
IC1, 2 HA12058-NT
MONITOR (8) (16)
REC/PB (18)
OFF/B/C (17)
VDD (4) (12)
REC IN (3) (11)
PB IN (1) (9)
REF (2) (10)
VGG (6) (14)
GND (5) (13)
REC OUT (7) (15)
C : 8V
B : 6V
OFF: 0V
OFF/B/C CONTROL
REC/PB CONTROL
OUTPUT AMP
INPUT AMP
POWER SUPPLY
L1
C33 4.7/50
R29 1K
R27 3.3K
R25 82K
C31 0.47/50
C29 0.15/50
R23 6.2K
C27 0.082J
C25 LL 4.7/50
C21 0.0047J
R13 10K
R21 47K
R19 470
R15 68K
C19 0.0056J
C17 39P
C23 0.0082
R17 4.7K
R1 8.2K
R5 3.3K
C1 0.033
R7 24K
C3 4.7/50 LL
C5 0.01J
C9 0.33/50
R9 82K
C15 0.68/50
R11 2.2M
C11 0.15/50
C13 0.47/50
R3 6.2K
C7 0.018
MONITOR
SS-1
SS-2
t-22
t-21
HPA-2
VCR-2
SCF-2
A.S
PC
NC
VDD
REC IN
IC AGND
VGG
PB IN
REF
S-1
SCF-1
VCR 1
HPA-1
S-2
t-11
t-12
S-3
REC OUT
12V
6V
0V
6.2V
0.7V
0.1V (4.6V)

WIRING(FX-A770)

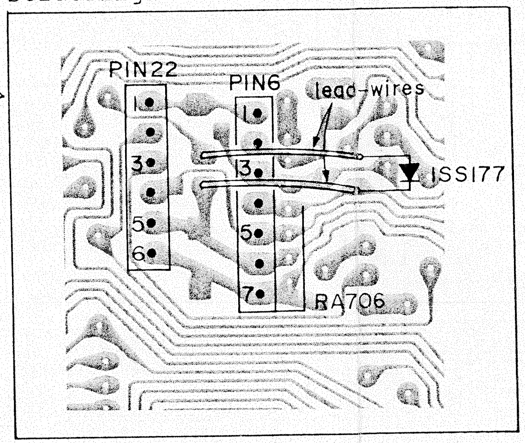

B DOLBY-NR C.B
IC1
IC2
L1
L2
C:8
B:6
OFF:0
1 3 5 7 8
9 11 13 15 17 18
To A MAIN C.B

ADJUSTMENT (FX-A770)

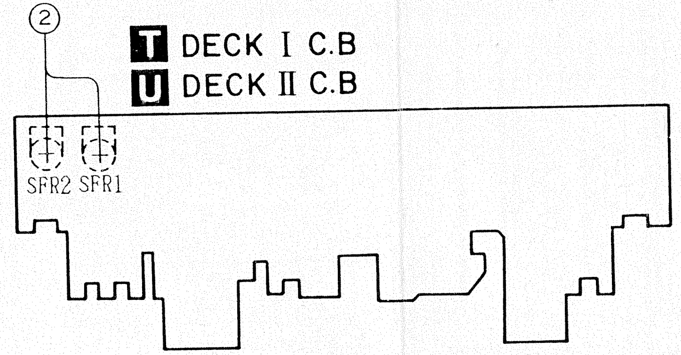
A MAIN C.B



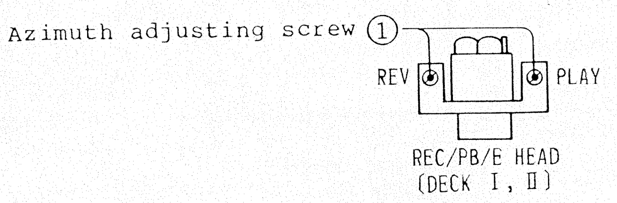
Soldering side



T DECK I C.B
U DECK II C.B



① Azimuth adjustment
Conditions: Alignment tape TTA-317E
Ajusted point:
Azimuth adjusting screw
Method: Adjusted in the PLAY and REV modes.
Note: Deck I can be adjusted from the outside through square holes in the bottom.



② Speed adjustment (decks I and II)
Conditions: Alignment tapes:TTA-111H/111S/119J (LH)
Adjusted points:SFR1, 2 (decks I and II)

	Step 1	Step 2	Step 3	Step 4
Deck I operation	Load alignment tape TTA-111H.	PLAY (TTA-111S)	STOP	STOP
Deck II operation	Load alignment tape TTA-119J.	STOP	PLAY (TTA-111H)	PLAY (TTA-111S)
Method	Dub the tape at two times normal speed and adjust SFR2 of deck I so that the tape signal is 3kHz.	Adjust SFR1 of deck I so that the tape signal is 3kHz.	Connect a 15K-ohm resistor between test pin 1 and chassis and run the tape at two times normal speed. Adjust SFR2 of deck II so that the tape signal is 3kHz.	Disconnect the 15K-ohm resistor from the test pin and run the tape at normal speed. Adjust SFR1 of deck II so that the tape signal is 3kHz.

Note: Speed should be adjusted first at two times normal speed, then at normal speed.
Turn SFR2, then check the tape speed at normal speed.

③ Playback frequency response adjustment
Conditions: Alignment tape TTA-317E
Adjusted points: SFR3 (L CH) deck I
SFR4 (R CH) deck I
SFR53 (L CH) deck II
SFR54 (R CH) deck II
Method: Play back the alignment tape and adjust SFR3/4 (of deck I) and SFR53/54 (of deck II) so that the 10kHz output is -0.5dB ±0.3dB with respect to 1kHz.

⑤ Recording/playback frequency response and sensitivity adjustments (deck I)
Conditions: Alignment tape TTA-119J
Test point: DIN OUT terminal
Signal input: DIN IN terminal
Adjusted points: SFR321 (L CH)
SFR322 (R CH)
SFR171 (L CH)
SFR174 (R CH)

Method:
(1) Turn off the power and solder the lead wire as shown in the illustration.
(2) Turn on the power and load alignment tape TTA-119J into deck I.
(3) Connect diode 1SS177 to the lead wire as shown in the illustration. When the FWD-PLAY button is pressed, the unit enters the REC mode.
(Check that the REC mode is entered, and remove the diode.
(4) Adjust the attenuator so that the output at the test point is 25mV.
(5) Record and play back 1kHz and 10kHz signals using deck I, then adjust SFR321 and SFR322 so that the 10kHz output is 0dB to -0.5dB with the 1kHz output as reference.
(6) Adjust SFR171 and SFR174 so that the recording and playback output is 25mV ±0.2dB in Step (5).

⑦ Dubbing adjustment at two times normal speed
Conditions: Alignment tapes TTA-317E/119J
Adjusted points: SFR5 (L CH)
SFR6 (R CH)
Method: Load alignment tapes TTA-317E into deck I and TTA-119J into deck II and dub the tape at two times normal speed. Adjust SFR5 and SFR6 so that the resultant output is 0dB ±1dB.

④ Playback sensitivity adj
Conditions: Alignment tape T
Adjusted points:

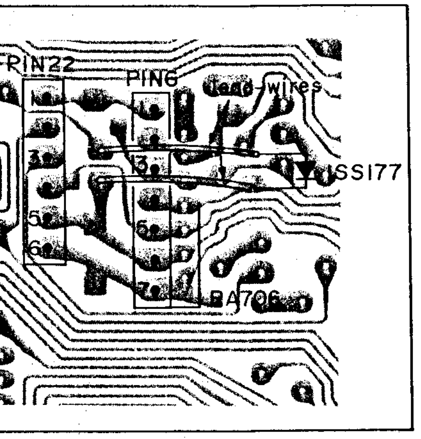
Method: Play back the alignm
SFR1/2 (of deck I) a
II) so that the pla
±10mV.

⑥ Recording/playback freq
sensitivity adjustments

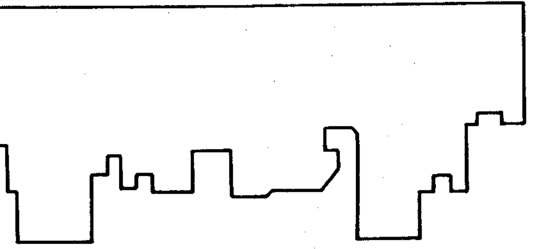
Conditions: Alignment tape
Test point: DIN
Signal input: D
Adjusted points

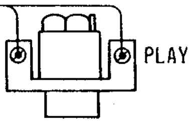
Method:
(1) Set the timer switch to
EVERY), turn on the pow
into the REC mode.
(2) Input a 1kHz signal and
so that the output at t
then stop deck I.
(3) Connect test pin 2 to g
15k-ohm resistor.
(4) Record and play back 1k
using deck II, then adj
so that the 10kHz outpu
with the 1kHz output as
Note: Even if deck II e
signal is output a
(5) Adjust SFR172 and SFR17
recording and playback
in Step (4).

ing side



T DECK I C.B
U DECK II C.B





REC/PB/E HEAD
(DECK I, II)

Step 4
STOP
PLAY (TTA-111S)
Disconnect the 15K-ohm resistor from the test pin and run the tape at normal speed. Adjust SFR1 of deck II so that the tape signal is 3kHz.

③ Playback frequency response adjustment
Conditions: Alignment tape TTA-317E
Adjusted points: SFR3 (L CH) deck I
SFR4 (R CH) deck I
SFR53 (L CH) deck II
SFR54 (R CH) deck II
Method: Play back the alignment tape and adjust SFR3/4 (of deck I) and SFR53/54 (of deck II) so that the 10kHz output is -0.5dB ±0.3dB with respect to 1kHz.

⑤ Recording/playback frequency response and sensitivity adjustments (deck I)
Conditions: Alignment tape TTA-119J
Test point: DIN OUT terminal
Signal input: DIN IN terminal
Adjusted points: SFR321 (L CH)
SFR322 (R CH)
SFR171 (L CH)
SFR174 (R CH)
Method:
(1) Turn off the power and solder the lead wire as shown in the illustration.
(2) Turn on the power and load alignment tape TTA-119J into deck I.
(3) Connect diode 1SS177 to the lead wire as shown in the illustration. When the FWD-PLAY button is pressed, the unit enters the REC mode.
(Check that the REC mode is entered, and remove the diode.
(4) Adjust the attenuator so that the output at the test point is 25mV.
(5) Record and play back 1kHz and 10kHz signals using deck I, then adjust SFR321 and SFR322 so that the 10kHz output is 0dB to -0.5dB with the 1kHz output as reference.
(6) Adjust SFR171 and SFR174 so that the recording and playback output is 25mV ±0.2dB in Step (5).

⑦ Dubbing adjustment at two times normal speed
Conditions: Alignment tapes TTA-317E/119J
Adjusted points: SFR5 (L CH)
SFR6 (R CH)
Method: Load alignment tapes TTA-317E into deck I and TTA-119J into deck II and dub the tape at two times normal speed. Adjust SFR5 and SFR6 so that the resultant output is 0dB ±1dB.

④ Playback sensitivity adjustment
Conditions: Alignment tape TTA-161
Adjusted points: SFR1 (L CH) deck I
SFR2 (R CH) deck I
SFR51 (L CH) deck II
SFR52 (R CH) deck II
Method: Play back the alignment tape and adjust SFR1/2 (of deck I) and SFR51/52 (of deck II) so that the playback output is 370 ±10mV.

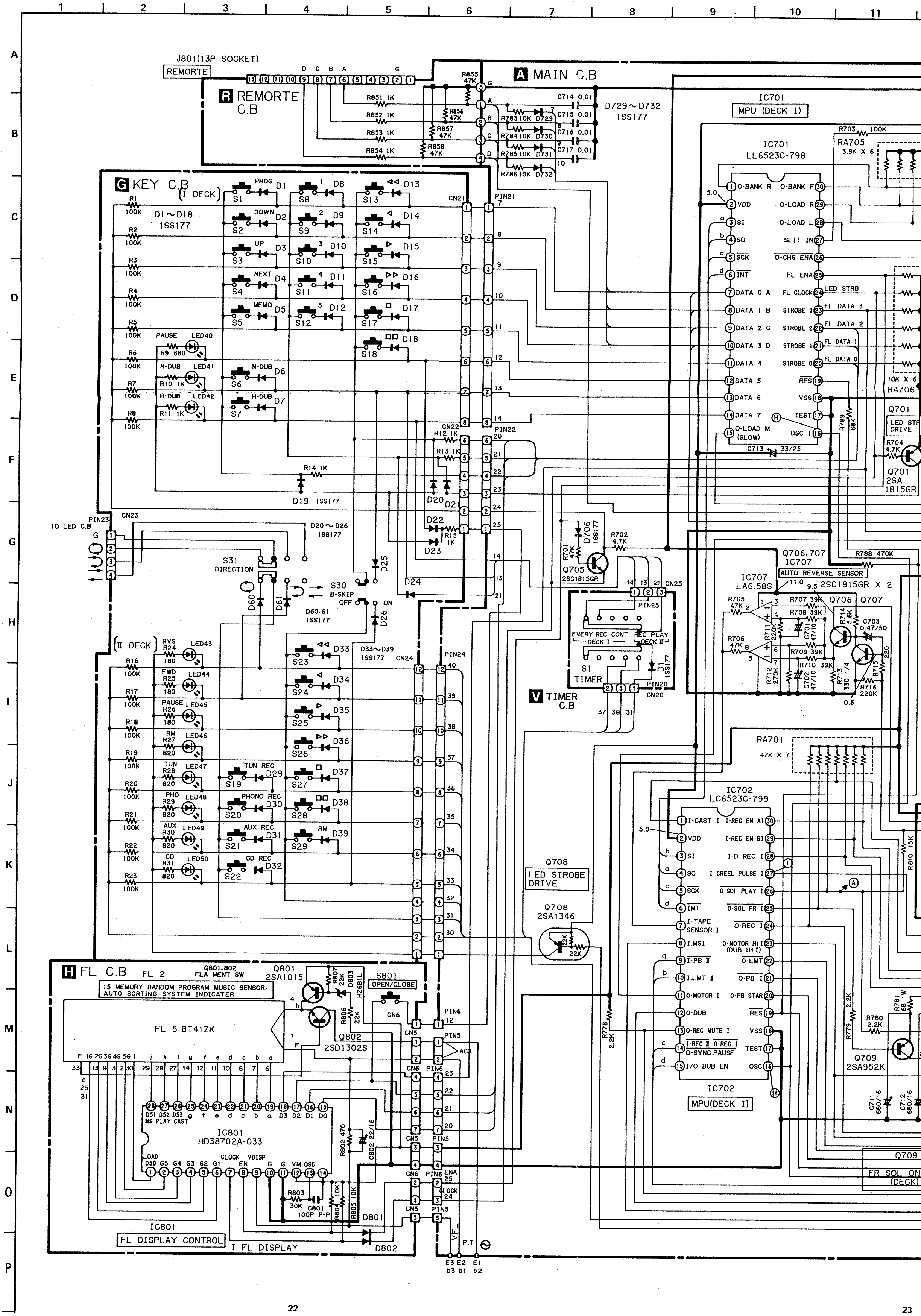
⑥ Recording/playback frequency response and sensitivity adjustments (deck II)

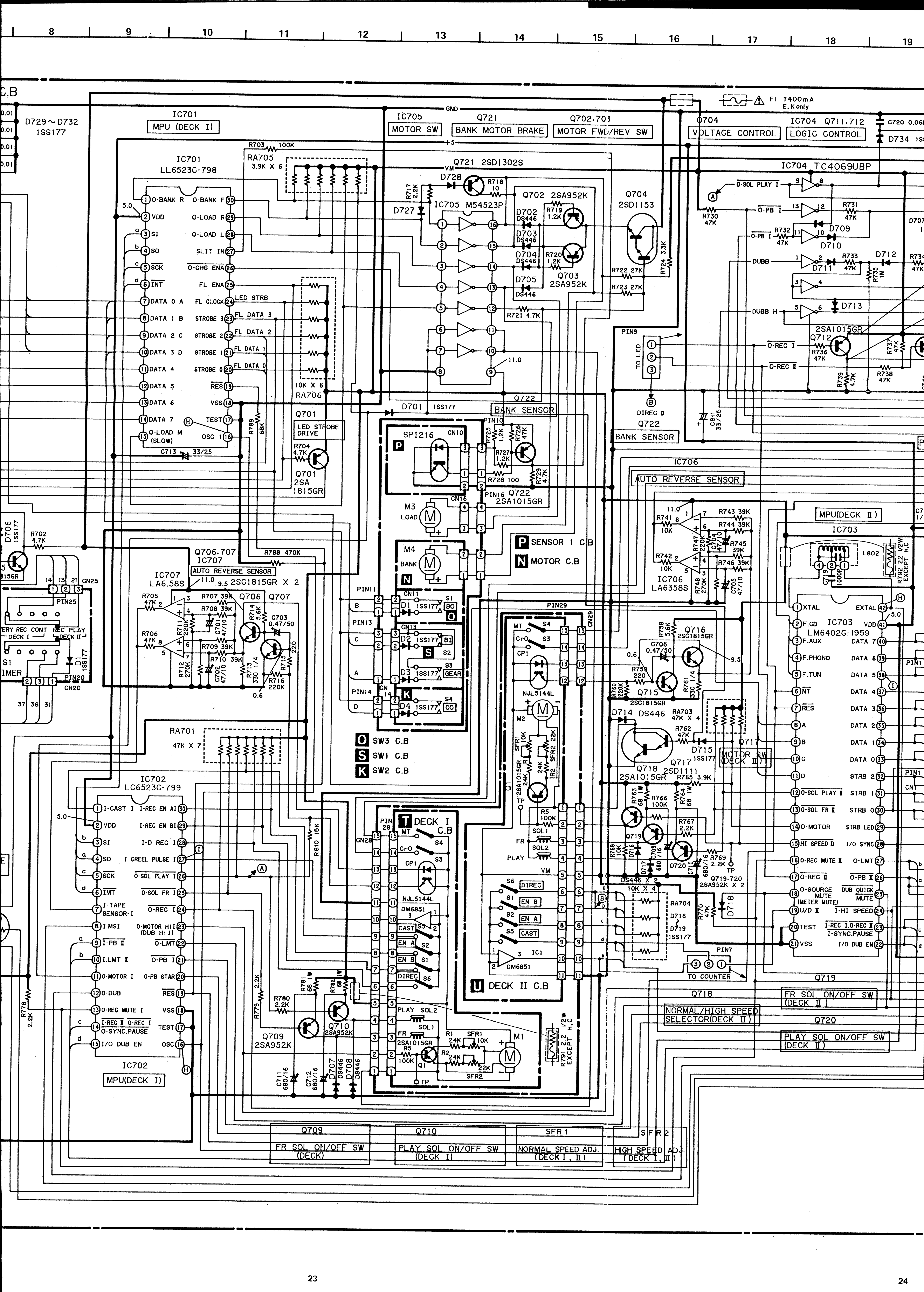
Conditions: Alignment tape TTA-119J
Test point: DIN OUT terminal
Signal input: DIN IN terminal
Adjusted points: SFR323 (L CH)
SFR324 (R CH)
SFR173 (L CH)
SFR172 (R CH)
Method:
(1) Set the timer switch to I REC (CONT or EVERY), turn on the power, and put deck I into the REC mode.
(2) Input a 1kHz signal and adjust the attenuator so that the output at the test point is 25mV, then stop deck I.
(3) Connect test pin 2 to ground through a 15k-ohm resistor.
(4) Record and play back 1kHz and 10kHz signals using deck II, then adjust SFR323 and SFR324 so that the 10kHz output is -0.5dB to -1.0dB with the 1kHz output as reference.
Note: Even if deck II enters the REC mode, no signal is output at the test point.
(5) Adjust SFR172 and SFR173 so that the recording and playback output is 25mV ±0.2dB in Step (4).

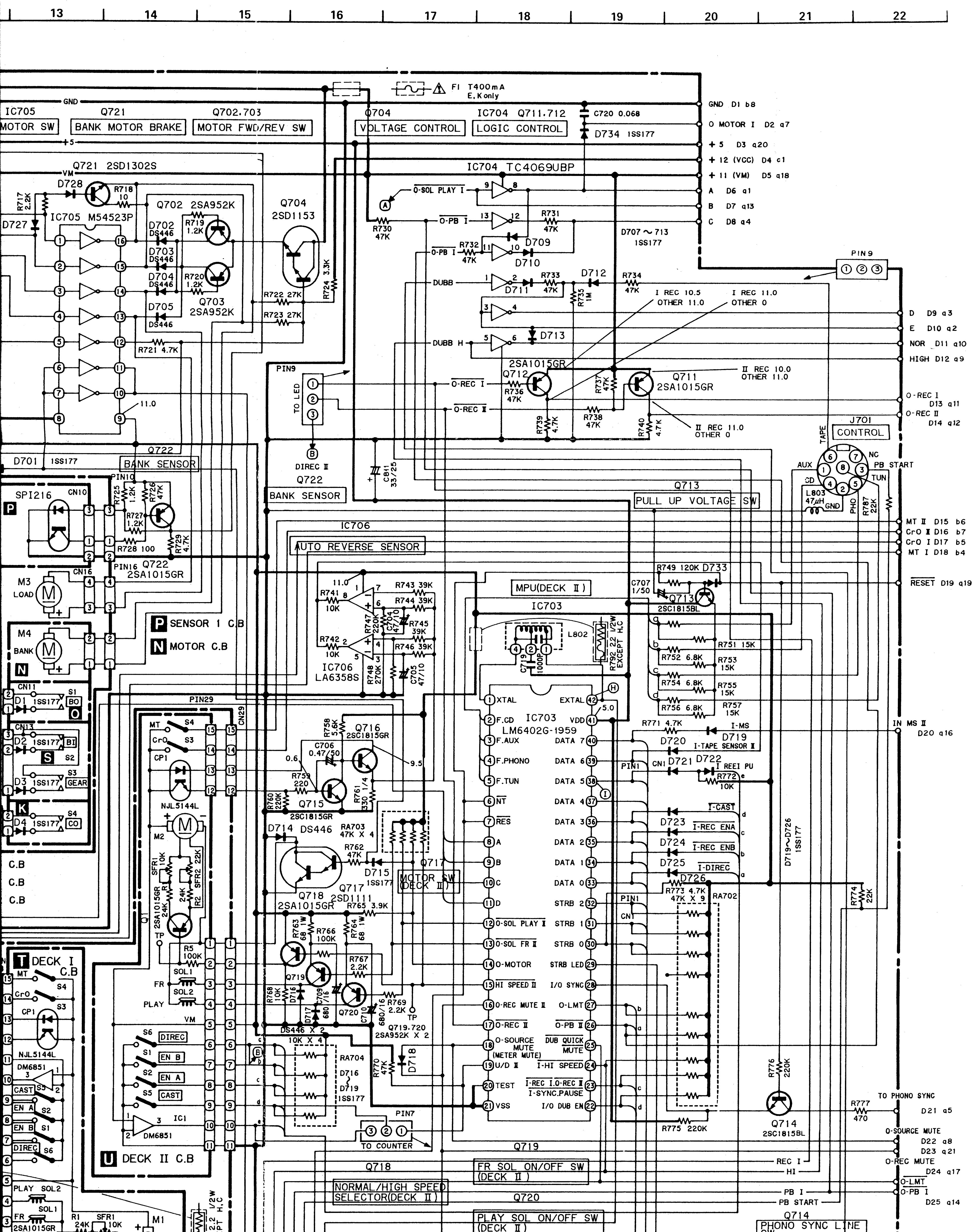
Practical Service Figure

Tape speed	4.8cm/s ±1.5%
Pinch roller pressure	290 ±70g
Take-up torque	$40 \pm^{20}_{10}$g-cm
FF & REW torque	130 ±30g-cm
Back tension	4 ±1.5g-cm
Distortion ratio (REC/PB)	2% or less
Noise (PB)	2.0mV or less (NORMAL, DOLBY-NR OFF) 0.8mV or less (METAL, CrO_2, DOLBY-NR ON)
Erasure ratio	60dB or more (at 125Hz)
S/N ratio (REC/PB)	40dB or more (NORMAL)
Input	LINE IN 230mV/68k ohms
Alignment tape	NORMAL TTA-119J CrO_2 TTA-119G METAL TTA-119MP

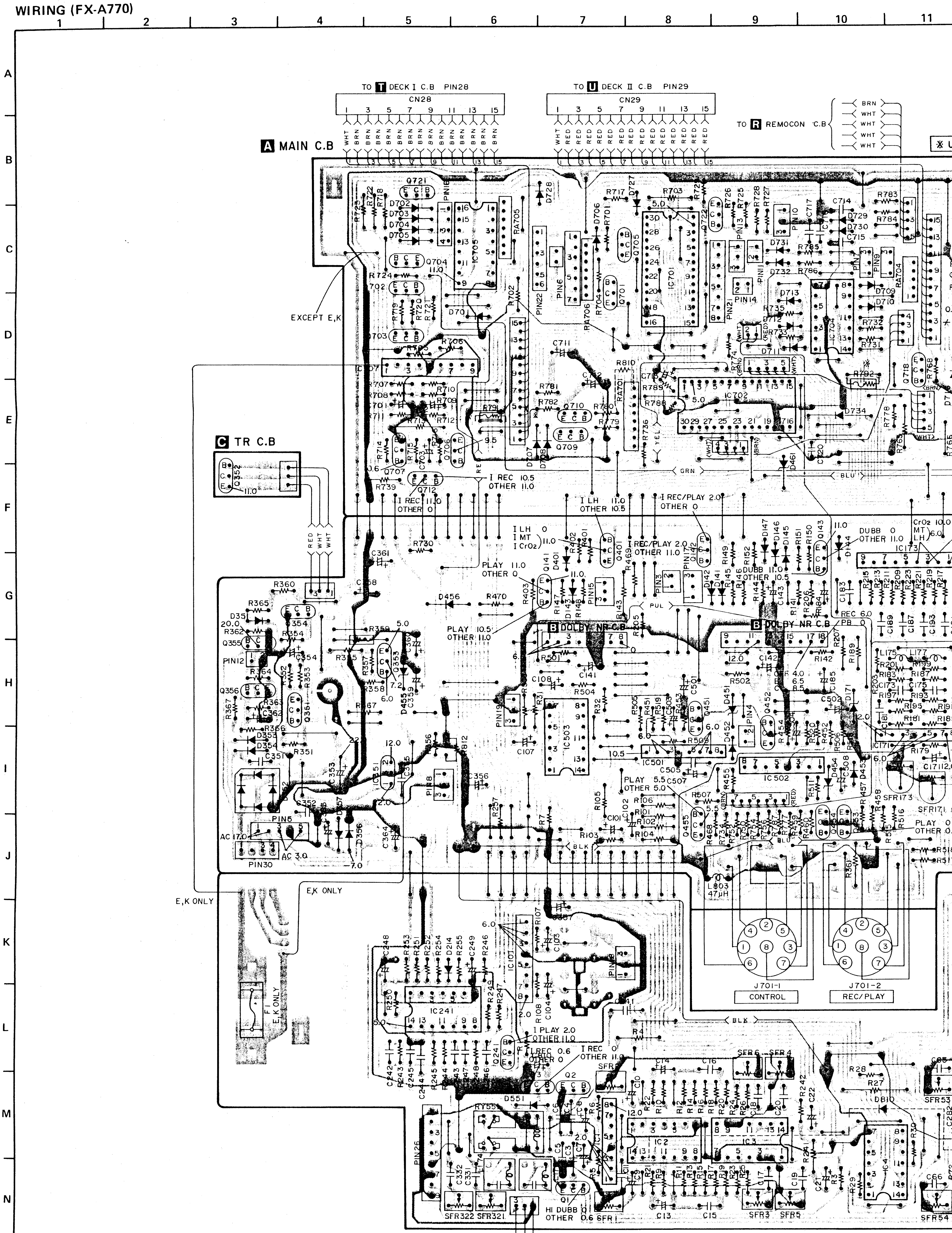
SCHEMATIC DIAGRAM (FX-A770)


J801(13P SOCKET)
REMORTE
R REMORTE C.B
A MAIN C.B
R851 1K
R852 1K
R853 1K
R854 1K
R855 47K
R856 47K
R857 47K
R858 47K
C714 0.01
C715 0.01
C716 0.01
C717 0.01
R783 10K
R784 10K
R785 10K
R786 10K
D729~D732 1SS177
IC701
MPU (DECK I)
IC701 LL6523C-798
R703 100K
RA705 3.9K X 6
G KEY C.B (I DECK)
D1~D18 1SS177
PROG
DOWN
UP
NEXT
MEMO
PAUSE
N-DUB
H-DUB
CN21
PIN21
CN22
PIN22
D19 1SS177
D20~D26 1SS177
TO LED C.B
CN23
PIN23
S31 DIRECTION
S30 B-SKIP
D60.61 1SS177
(II DECK)
RVS
FWD
PAUSE
RM
TUN
PHO
AUX
CD
TUN REC
PHONO REC
AUX REC
CD REC
D33~D39 1SS177
CN24
PIN24
O-BANK R
VDD
SI
SO
SCK
INT
DATA 0 A
DATA 1 B
DATA 2 C
DATA 3 D
DATA 4
DATA 5
DATA 6
DATA 7
O-LOAD M (SLOW)
O-BANK F
O-LOAD R
O-LOAD L
SLIT IN
O-CHG ENA
FL ENA
FL CLOCK
STROBE 3
STROBE 2
STROBE 1
STROBE 0
RES
VSS
TEST
OSC 1
LED STRB
FL DATA 3
FL DATA 2
FL DATA 1
FL DATA 0
10K X 6 RA706
Q701 LED STROBE DRIVE
R704 4.7K
Q701 2SA 1815GR
C713 33/25
R789 68K
R701 47K
D706 1SS177
R702 4.7K
Q705 2SC1815GR
Q706.707 IC707 AUTO REVERSE SENSOR
R788 470K
IC707 LA6.58S
2SC1815GR X 2
CN25
PIN25
EVERY REC CONT DECK I
REC PLAY DECK II
S1 TIMER
V TIMER C.B
CN20
PIN20
R705 47K
R706 47K
R707 39K
R708 39K
R709 39K
R710 39K
R711 220K
R712 270K
R713 330 1/4
R714 5.6K
R715 220
R716 220K
C701 47/10
C702 47/10
C703 0.47/50
RA701 47K X 7
IC702 LC6523C-799
I-CAST I
I-REC EN A I
I-REC EN B I
I-D REC I
I CREEL PULSE I
O-SOL PLAY I
O-SOL FR I
O-REC I
O-MOTOR H I (DUB H I)
O-LMT
O-PB I
O-PB STAR
I-TAPE SENSOR-I
I.MSI
I-PB II
I.LMT I
O-MOTOR I
O-DUB
O-REC MUTE I
I-REC II O-REC I O-SYNC.PAUSE
I/O DUB EN
IC702 MPU(DECK I)
Q708 LED STROBE DRIVE
Q708 2SA1346
R778 2.2K
R779 2.2K
R780 2.2K
R781 68 1W
R810 15K
Q709 2SA952K
C711 680/16
C712 680/16
Q709 FR SOL ON (DECK)
H FL C.B FL 2
Q801.802 FLA MENT SW
Q801 2SA1015
15 MEMORY RANDOM PROGRAM MUSIC SENSOR/ AUTO SORTING SYSTEM INDICATER
FL 5-BT41ZK
R807 22K
D803 HZ6B1L
R806 22K
S801 OPEN/CLOSE
Q802 2SD1302S
CN6
PIN6
CN5
PIN5
AC3
IC801 HD38702A-033
LOAD
CLOCK
VDISP
EN
VM OSC
R802 470
C802 22/16
R803 30K
C801 100P P-P
R804 10K
R805 10K
D801
D802
IC801 FL DISPLAY CONTROL
I FL DISPLAY
VFL
P.T
E3 E2 E1
b3 b1 b2

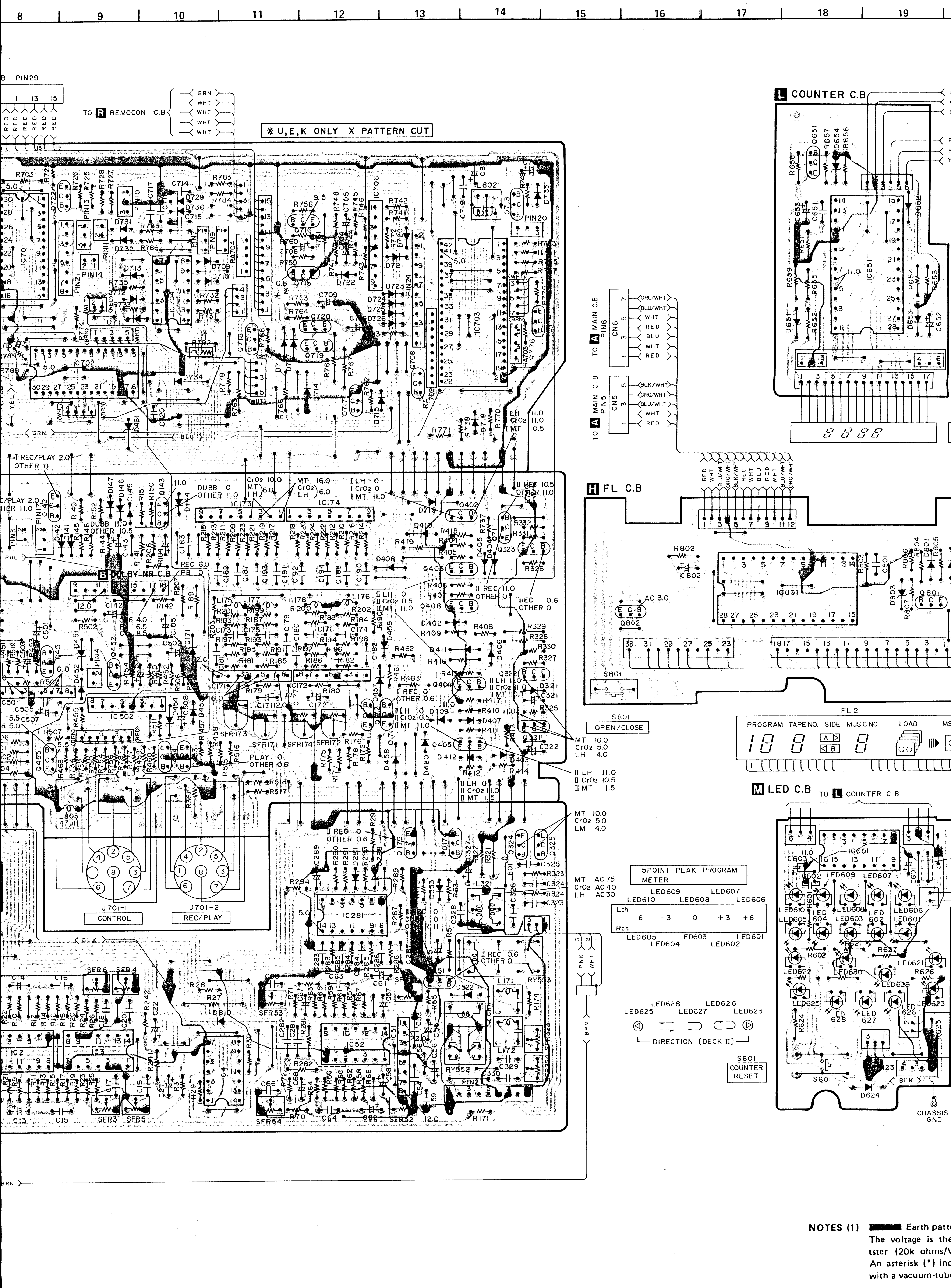

8
9
10
11
12
13
14
15
16
17
18
19
D729～D732
1SS177
IC701
MPU (DECK I)
IC701
LL6523C-798
IC705
MOTOR SW
Q721
BANK MOTOR BRAKE
Q702.703
MOTOR FWD/REV SW
Q704
VOLTAGE CONTROL
IC704 Q711.712
LOGIC CONTROL
F1 T400mA
E.K only
C720 0.068
D734
GND
+5
R703 100K
RA705
3.9K X 6
Q721 2SD1302S
VM
D728
R718 10
R717 2.2K
IC705 M54523P
D727
Q702 2SA952K
D702 DS446
D703 DS446
D704 DS446
D705 DS446
R719 1.2K
R720 1.2K
Q703 2SA952K
Q704 2SD1153
R722 27K
R723 27K
R724 3.3K
R721 4.7K
IC704 TC4069UBP
O-SOL PLAY I
O-PB I
O-PB II
DUBB
DUBB H
O-REC I
O-REC II
R730 47K
R731 47K
R732 47K
R733 47K
D709
D710
D711
D712
D713
R735 1M
2SA1015GR
Q712
R736 47K
R737 47K
R738 47K
R739 4.7K
PIN9
TO LED
DIREC II
Q722
BANK SENSOR
C811 33/25
0-BANK R
O-BANK F
VDD
O-LOAD R
SI
O-LOAD L
SO
SLIT IN
SCK
O-CHG ENA
INT
FL ENA
DATA 0 A
FL CLOCK
LED STRB
DATA 1 B
STROBE 3
FL DATA 3
DATA 2 C
STROBE 2
FL DATA 2
DATA 3 D
STROBE 1
FL DATA 1
DATA 4
STROBE 0
FL DATA 0
DATA 5
RES
DATA 6
VSS
DATA 7
TEST
O-LOAD M (SLOW)
OSC 1
5.0
10K X 6
RA706
R789 68K
C713 33/25
Q701
LED STROBE DRIVE
R704 4.7K
Q701 2SA 1815GR
D701 1SS177
11.0
BANK SENSOR
SPI216
CN10
PIN10
R725 1.2K
R726 47K
R727 1.2K
R728 100
R729 4.7K
PIN16
Q722 2SA1015GR
M3 LOAD
CN16
M4 BANK
P SENSOR 1 C.B
N MOTOR C.B
D706 1SS177
R702 4.7K
Q706.707
IC707
AUTO REVERSE SENSOR
R788 470K
IC707 LA6.58S
9.5 2SC1815GR X 2
R705 47K
R707 39K
R708 39K
Q706
Q707
R714 5.6K
C703 0.47/50
R711 220K
C701 47/10
R709 39K
R710 39K
R706 47K
R712 270K
C702 47/10
R713 330 1/4
R715 220
R716 220K
0.6
CN25
PIN25
ERY REC CONT DECK I
REC PLAY DECK II
S1
IMER
D1 1SS177
PIN20
CN20
37 38 31
PIN11
CN11
D1 1SS177
S1 BO
PIN13
CN13
D2 1SS177
BI
S2
D3 1SS177
S3 GEAR
PIN14
CN14
D4 1SS177
S4 CO
O SW3 C.B
S SW1 C.B
K SW2 C.B
RA701
47K X 7
IC702
LC6523C-799
I-CAST I
I-REC EN AI
VDD
I-REC EN BI
SI
I-D REC I
SO
I CREEL PULSE I
SCK
O-SOL PLAY I
IMT
O-SOL FR I
I-TAPE SENSOR-I
O-REC I
I.MSI
O-MOTOR HI I (DUB HI I)
I-PB II
O-LMT
I.LMT II
O-PB I
O-MOTOR I
O-PB STAR
O-DUB
O-REC MUTE I
I-REC II O-REC I
O-SYNC.PAUSE
I/O DUB EN
OSC
R810 15K
R778 2.2K
IC702
MPU(DECK I)
R779 2.2K
R780 2.2K
R781 68 1W
R782 68 1W
Q709 2SA952K
Q710 2SA952K
C711 680/16
C712 680/16
D707 DS446
D708 DS446
PIN 28
CN28
T DECK I C.B
MT
S4
CrO
S3
CP1
NJL5144L
DM6851
CAST S5
EN A S2
EN B S1
DIREC S6
PLAY SOL2
SOL1
FR
2SA1015GR
R5 100K
Q1
TP
R1 24K
SFR1 10K
R2 24K
22K
SFR2
M1
R791 2.2 1/2W EXCEPT H.C
PIN29
CN29
M2
SFR1 10K
SFR2 22K
2SA1015GR
R5 100K
SOL1
SOL2
PLAY
DIREC
EN B
EN A
CAST
IC1 DM6851
U DECK II C.B
IC706
AUTO REVERSE SENSOR
R741 10K
R743 39K
R744 39K
R745 39K
R746 39K
R747 220K
C704 47/10
R742 10K
IC706 LA6358S
R748 270K
C705 47/10
R758 5.6K
Q716 2SC1815GR
C706 0.47/50
R759 220
Q715
R760 220K
R761 330 1/4
2SC1815GR
D714 DS446
RA703 47K X 4
R762 47K
D715 1SS177
Q717
MOTOR SW (DECK II)
Q718 2SA1015GR
Q717 2SD1111
R765 3.9K
R763 68 1W
R766 100K
R764 68 1W
R767 2.2K
Q719
Q720
R768 10K
D716
D717
C709 680/16
C710 680/16
R769 2.2K
Q719.720 2SA952K X 2
DS446 X 2
10K X 4
RA704
D716 D719 1SS177
R770 47K
D718
PIN7
TO COUNTER
MPU(DECK II)
IC703
L802
C719 100P
R792 22 1/2W EXCEPT H.C
XTAL
EXTAL
F.CD
IC703 LM6402G-1959
F.AUX
DATA 7
F.PHONO
DATA 6
F.TUN
DATA 5
NT
DATA 4
RES
DATA 3
A
DATA 2
B
DATA 1
C
DATA 0
D
STRB 2
O-SOL PLAY II
STRB 1
O-SOL FR II
STRB 0
O-MOTOR
STRB LED
HI SPEED II
I/O SYNC
O-REC MUTE II
O-LMT
O-REC II
O-PB II
O-SOURCE MUTE (METER MUTE)
DUB QUICK MUTE
U/D II
I-HI SPEED
TEST
I-REC I.O-REC II
I-SYNC.PAUSE
VSS
I/O DUB EN
Q719
FR SOL ON/OFF SW (DECK II)
Q718
NORMAL/HIGH SPEED SELECTOR(DECK II)
Q720
PLAY SOL ON/OFF SW (DECK II)
Q709
FR SOL ON/OFF SW (DECK)
Q710
PLAY SOL ON/OFF SW (DECK I)
SFR1
NORMAL SPEED ADJ. (DECK I, II)
SFR2
HIGH SPEED ADJ. (DECK I, II)


13
14
15
16
17
18
19
20
21
22
GND
IC705
MOTOR SW
Q721
BANK MOTOR BRAKE
Q702.703
MOTOR FWD/REV SW
Q704
VOLTAGE CONTROL
IC704 Q711.712
LOGIC CONTROL
F1 T400mA E,K only
C720 0.068
D734 1SS177
GND D1 b8
O MOTOR I D2 a7
+5 D3 a20
+12 (VCC) D4 c1
+11 (VM) D5 a18
A D6 a1
B D7 a13
C D8 a4
Q721 2SD1302S
IC704 TC4069UBP
D728
R718 10
R717 2.2K
Q702 2SA952K
Q704 2SD1153
IC705 M54523P
D727
D702 DS446
R719 1.2K
D703 DS446
D704 DS446
R720 1.2K
Q703 2SA952K
D705 DS446
R721 4.7K
R722 27K
R723 27K
R724 3.3K
O-SOL PLAY I
O-PB I
R730 47K
R731 47K
R732 47K
D709
D710
D707~713 1SS177
DUBB
R733 47K
D712
D711
R734 47K
R735 1M
I REC 10.5 OTHER 11.0
I REC 11.0 OTHER 0
D713
DUBB H
2SA1015GR
Q712
Q711 2SA1015GR
II REC 10.0 OTHER 11.0
O-REC I
O-REC II
R736 47K
R737 47K
R738 47K
R739 4.7K
R740 4.7K
II REC 11.0 OTHER 0
PIN9
TO LED
DIREC II
Q722
BANK SENSOR
C811 33/25
11.0
D701 1SS177
Q722
BANK SENSOR
PIN10
SPI216
CN10
R725 1.2K
R726 47K
R727 1.2K
R728 100
R729 4.7K
PIN16 Q722 2SA1015GR
CN16
M3 LOAD
M4 BANK
SENSOR 1 C.B
MOTOR C.B
CN11
D1 1SS177 S1 BO
CN13
D2 1SS177 BI S2
D3 1SS177 S3 GEAR
D4 1SS177 S4 CO
C.B
IC706
AUTO REVERSE SENSOR
R741 10K
R742 10K
R743 39K
R744 39K
R745 39K
R746 39K
R747 220K
R748 270K
C704 47/10
C705 47/10
IC706 LA6358S
D
E D9 a3
D10 a2
NOR D11 a10
HIGH D12 a9
O-REC I D13 a11
O-REC II D14 a12
J701 CONTROL
TAPE
NC
PB START
AUX
TUN
CD
L803 47μH
GND
PHO
R787 22K
Q713
PULL UP VOLTAGE SW
MT II D15 b6
CrO II D16 b7
CrO I D17 b5
MT I D18 b4
RESET D19 a19
MPU(DECK II)
IC703
R749 120K
D733
C707 1/50
Q713 2SC1815BL
L802
C719 1000P
R792 22 1/2W EXCEPT H.C
R751 15K
R752 6.8K
R753 15K
R754 6.8K
R755 15K
R756 6.8K
R757 15K
XTAL
EXTAL
F.CD
IC703 LM6402G-1959
VDD
F.AUX
DATA 7
F.PHONO
DATA 6
F.TUN
DATA 5
NT
DATA 4
RES
DATA 3
A
DATA 2
B
DATA 1
C
DATA 0
D
STRB 2
O-SOL PLAY II
STRB 1
O-SOL FR II
STRB 0
O-MOTOR
STRB LED
HI SPEED II
I/O SYNC
O-REC MUTE II
O-LMT
O-REC II
O-PB II
O-SOURCE MUTE (METER MUTE)
DUB QUICK MUTE
U/D II
I-HI SPEED
TEST
I-REC I.O-REC II I-SYNC.PAUSE
VSS
I/O DUB EN
5.0
R771 4.7K
I-MS
D719 I-TAPE SENSOR II
D720
D721
D722
REEI PU
R772 10K
IN MS II D20 a16
I-CAST
D723
I-REC ENA
D724
I-REC ENB
D725
I-DIREC
D726
R773 4.7K 47K X 9
RA702
D719~D726 1SS177
R774 22K
R776 220K
Q714 2SC1815BL
R775 220K
R777 470
TO PHONO SYNC
D21 a5
O-SOURCE MUTE D22 a8
D23 a21
O-REC MUTE D24 a17
O-LMT
O-PB I D25 a14
REC I
HI
PB I
PB START
Q714
PHONO SYNC LINE SW
D26 a6
O.DUBB
IN MS I D27 a15
q7
PIN7
R758 5.6K
Q716 2SC1815GR
C706 0.47/50
0.6
9.5
R759 220
Q715
R761 1/4 330
R760 220K
2SC1815GR
D714 DS446
RA703 47K X 4
R762 47K
Q717
D715 1SS177
MOTOR SW (DECK II)
Q718 2SA1015GR
Q717 2SD1111
R765 3.9K
R763 68 1W
R766 100K
R764 68 1W
R767 2.2K
Q719
Q720
R768 10K
D716
D717
C709 680/16
C710 680/16
R769 2.2K
TP
Q719.720 2SA952K X 2
DS446 X 2
10K X 4
RA704
D716 ~ D719 1SS177
R770 47K
D718
PIN7
TO COUNTER
PIN29
CN29
MT S4
CrO S3
CP1
NJL5144L
M2
SFR1 10K
R1 24K
SFR2 22K
R2 24K
Q1 2SA1015GR
TP
R5 100K
SOL1
FR
SOL2
PLAY
VM
S6 DIREC
S1 EN B
S2 EN A
S5 CAST
IC1 DM6851
DECK II C.B
DECK I C.B
MT S4
CrO S3
CP1
NJL5144L
DM6851
CAST S5
EN A S2
EN B S1
DIREC S6
PLAY SOL2
SOL1
FR
R1 24K
SFR1 10K
2SA1015GR
R5 100K
R2 24K
22K
SFR2
Q1
TP
M1
R791 2.2 1/2W EXCEPT H.C
Q719
FR SOL ON/OFF SW (DECK II)
Q718
NORMAL/HIGH SPEED SELECTOR(DECK II)
Q720
PLAY SOL ON/OFF SW (DECK II)
Q710
PLAY SOL ON/OFF SW (DECK I)
SFR1
NORMAL SPEED ADJ. (DECK I, II)
SFR2
HIGH SPEED ADJ. (DECK I, II)

WIRING (FX-A770)



TO T DECK I C.B PIN28
CN28
TO U DECK II C.B PIN29
CN29
TO R REMOCON C.B
A MAIN C.B
C TR C.B
B DOLBY NR C.B
EXCEPT E,K
E,K ONLY
F,I ONLY
L803 47μH
J701-1 CONTROL
J701-2 REC/PLAY
IC701
IC702
IC704
IC705
IC501
IC502
IC503
IC241
IC1
IC2
IC3
IC4
PIN30
AC 17.0
AC 3.0
BLK
GRN
BLU
BRN


8
9
10
11
12
13
14
15
16
17
18
19
PIN29
TO R REMOCON C.B
BRN
WHT
※ U,E,K ONLY X PATTERN CUT
L COUNTER C.B
IC651
IC701
IC702
IC703
IC706
TO A MAIN C.B PIN6
CN6
TO A MAIN C.B PIN5
CN5
ORG/WHT
BLU/WHT
RED
BLK/WHT
GRN
BLU
YEL
I REC/PLAY 2.0
OTHER 0
DUBB 0
OTHER 11.0
IC173
IC174
B DOLBY NR C.B
H FL C.B
IC801
Q802
AC 3.0
S801
OPEN/CLOSE
FL 2
PROGRAM
TAPE NO.
SIDE
MUSIC NO.
LOAD
MT 10.0
CrO2 5.0
LH 4.0
I LH 11.0
II CrO2 10.5
II MT 1.5
M LED C.B
TO L COUNTER C.B
IC601
IC502
IC281
IC52
IC2
IC3
IC4
J701-1
CONTROL
J701-2
REC/PLAY
L803
47μH
5POINT PEAK PROGRAM
METER
LED609
LED607
LED610
LED608
LED606
Lch
-6
-3
0
+3
+6
Rch
LED605
LED603
LED601
LED604
LED602
MT AC 75
CrO2 AC 40
LH AC 30
LED628
LED626
LED625
LED627
LED623
DIRECTION (DECK II)
S601
COUNTER
RESET
D624
CHASSIS
GND
PNK
WHT
BRN
BLK
RY552
RY553
L171
L172
SFR3
SFR5
SFR52
SFR53
SFR54
SFR171
SFR172
SFR173
SFR174

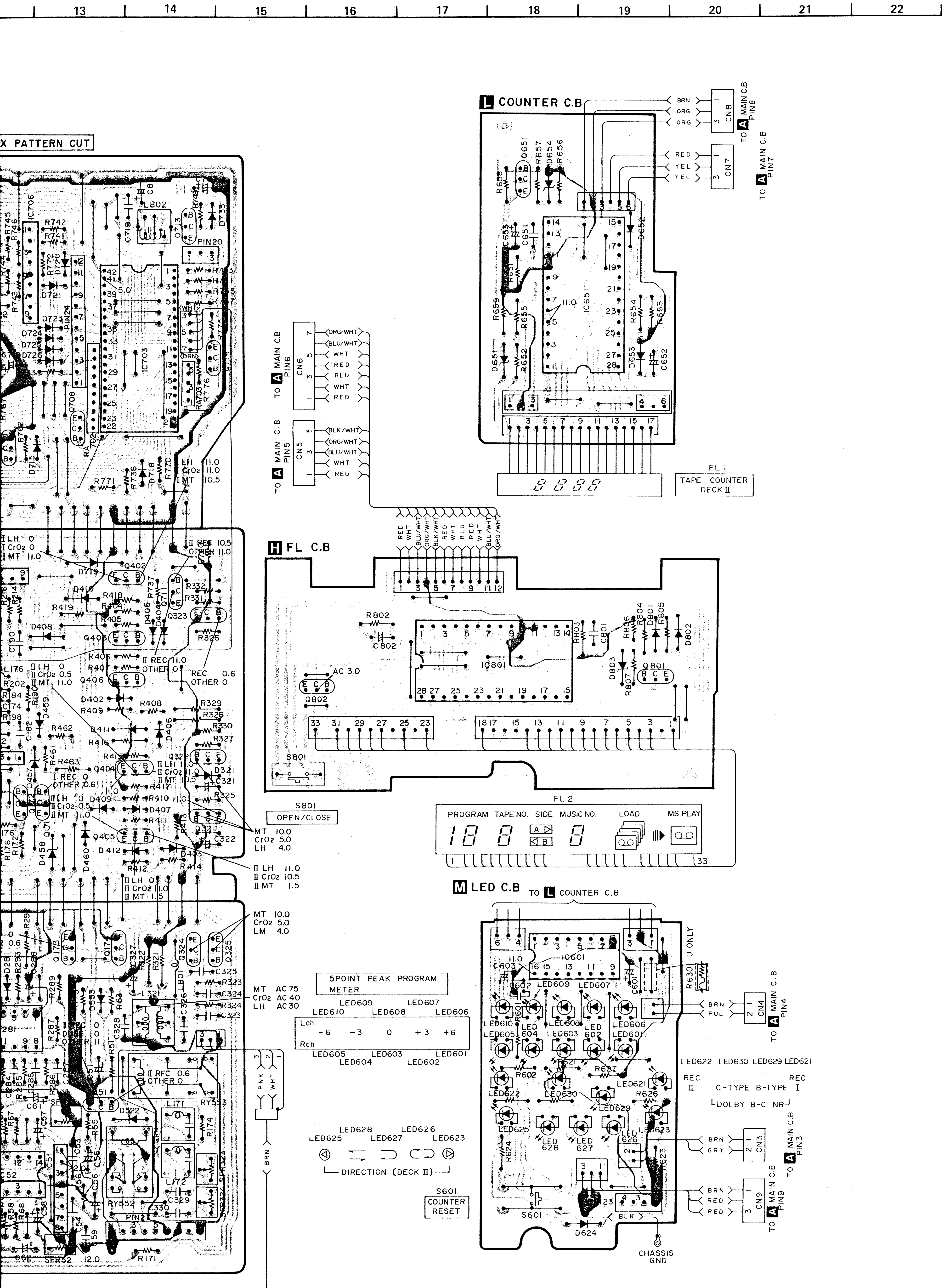
NOTES (1) ▬ Earth patt

The voltage is the

tster (20k ohms/V

An asterisk (*) inc

with a vacuum-tub



13
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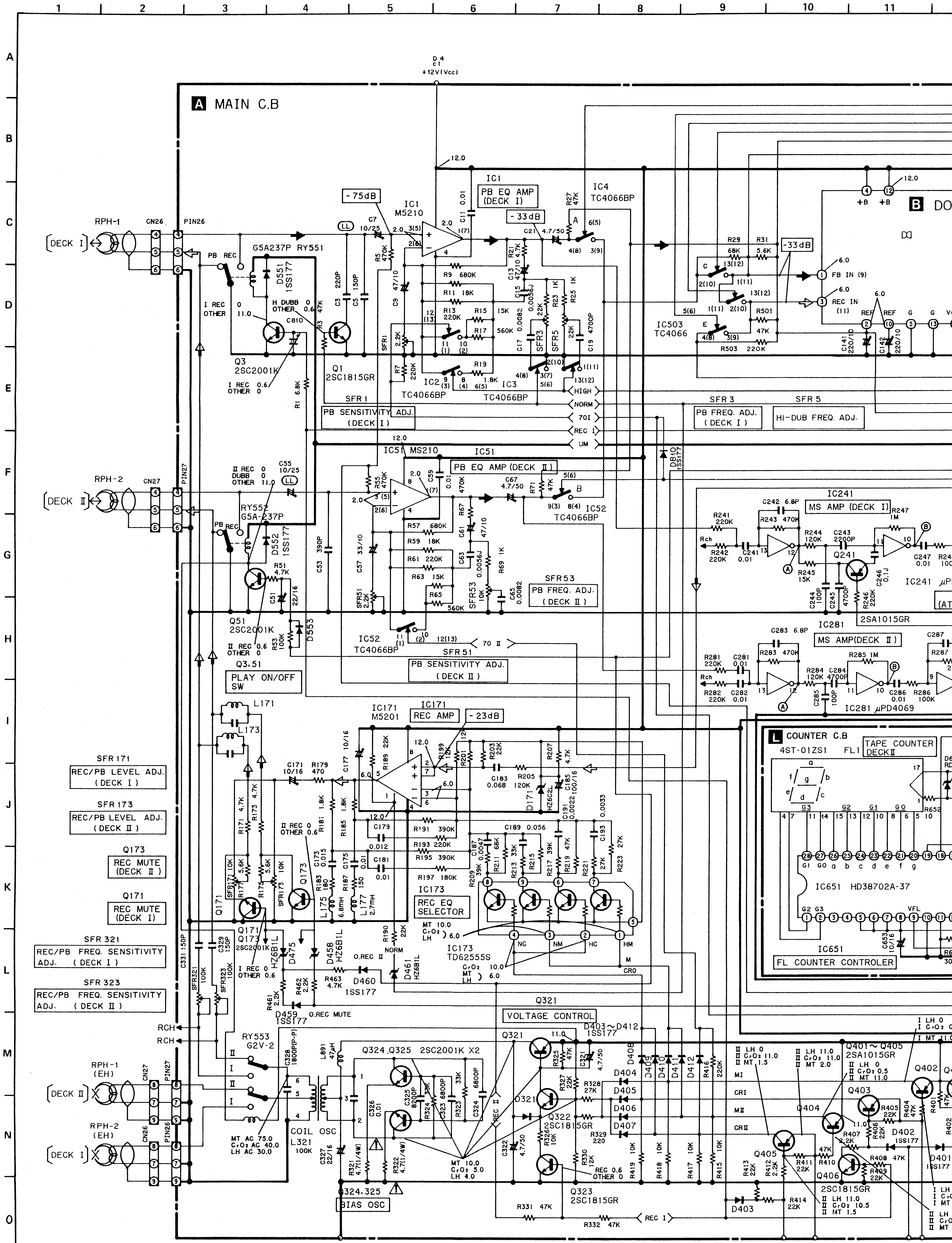
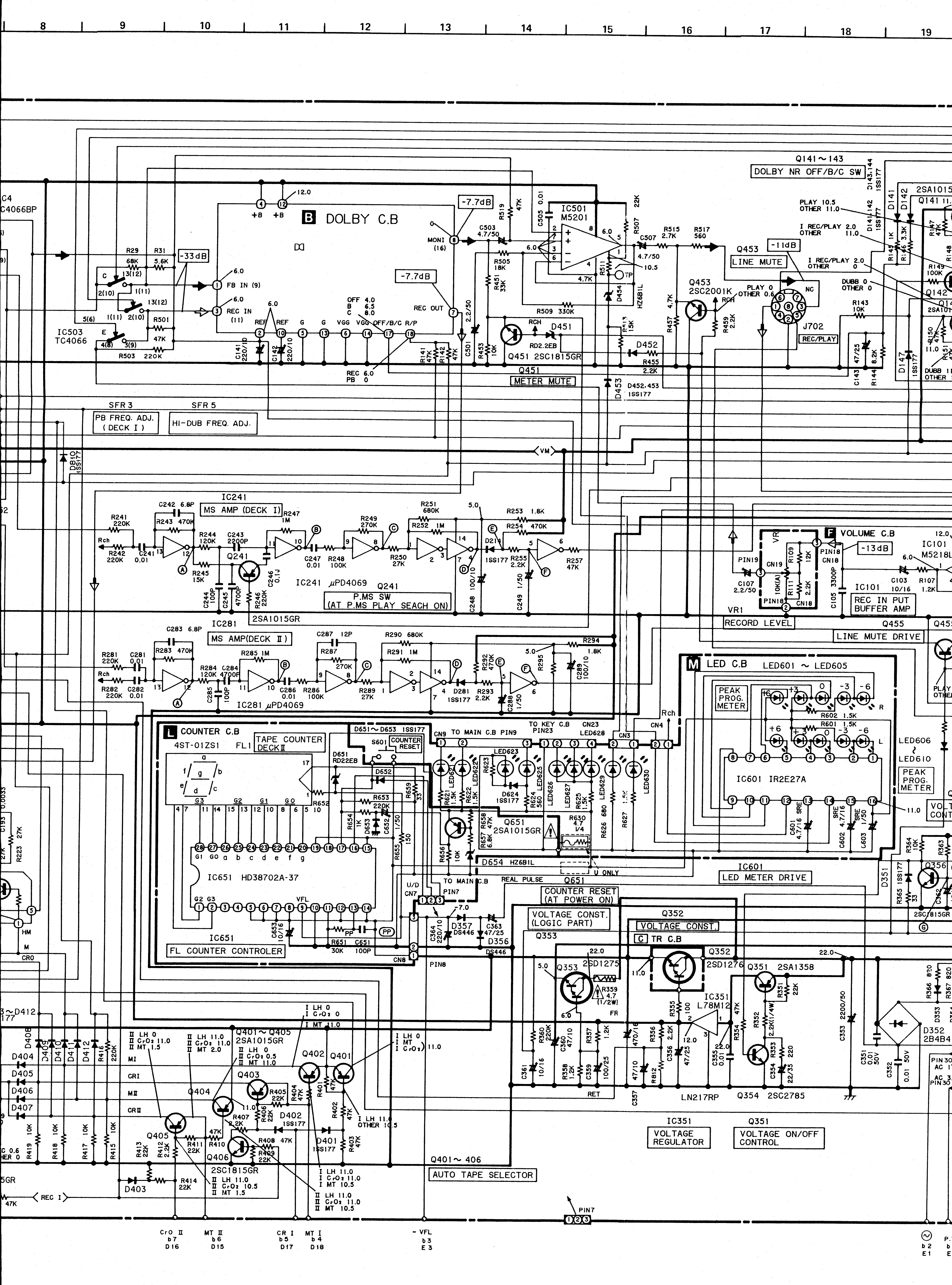
22
X PATTERN CUT
L COUNTER C.B
TO A MAIN C.B PIN8
CN8
TO A MAIN C.B PIN7
CN7
BRN
ORG
RED
YEL
IC651
Q651
FL 1
TAPE COUNTER DECK II
TO A MAIN C.B PIN6
CN6
TO A MAIN C.B PIN5
CN5
ORG/WHT
BLU/WHT
BLK/WHT
WHT
RED
BLU
H FL C.B
IC801
Q801
Q802
AC 3.0
S801
OPEN/CLOSE
FL 2
PROGRAM
TAPE NO.
SIDE
MUSIC NO.
LOAD
MS PLAY
M LED C.B
TO L COUNTER C.B
IC601
U ONLY
R630
TO A MAIN C.B PIN4
CN4
PUL
5POINT PEAK PROGRAM METER
LED609
LED607
LED610
LED608
LED606
Lch
-6
-3
0
+3
+6
Rch
LED605
LED603
LED601
LED604
LED602
LED622 LED630 LED629 LED621
REC II
C-TYPE
B-TYPE
REC I
DOLBY B-C NR
LED628
LED626
LED625
LED627
LED623
DIRECTION (DECK II)
S601
COUNTER RESET
TO A MAIN C.B PIN3
CN3
GRY
TO A MAIN C.B PIN9
CN9
D624
CHASSIS GND
PNK
WHT
MT 10.0
CrO2 5.0
LH 4.0
II LH 11.0
II CrO2 10.5
II MT 1.5
MT 10.0
CrO2 5.0
LM 4.0
MT AC 75
CrO2 AC 40
LH AC 30
IC703
IC706
RY552
RY553
PIN20
PIN21
PIN24

NOTES (1) ▬ Earth pattern ▨ Others pattern

The voltage is the reference value measured with a tster (20k ohms/V DC) when there are no signals. An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.

SCHEMATIC DIAGRAM (FX-A770)


A MAIN C.B
+12V(Vcc)
RPH-1
DECK I
CN26
PIN26
RPH-2
DECK II
CN27
PIN27
G5A237P RY551
RY552 G5A-237P
PB REC
I REC
OTHER
H DUBB
Q3 2SC2001K
Q1 2SC1815GR
Q51 2SC2001K
Q3.51
PLAY ON/OFF SW
D551 1SS177
D552 1SS177
D553
-75dB
-33dB
-23dB
IC1 M5210
IC1 PB EQ AMP (DECK I)
IC4 TC4066BP
IC2 TC4066BP
IC3 TC4066BP
SFR 1
PB SENSITIVITY ADJ. (DECK I)
SFR 3
PB FREQ. ADJ. (DECK I)
SFR 5
HI-DUB FREQ. ADJ.
HIGH
NORM
70I
REC I
UM
IC51 MS210
IC51 PB EQ AMP (DECK II)
IC52 TC4066BP
SFR53
PB FREQ. ADJ. (DECK II)
SFR 51
PB SENSITIVITY ADJ. (DECK II)
70 II
IC503 TC4066
FB IN (9)
REC IN (11)
B DO
D810 1SS177
IC241
MS AMP (DECK I)
IC241 μP
2SA1015GR
IC281
MS AMP (DECK II)
IC281 μPD4069
Rch
L COUNTER C.B
4ST-01ZS1
FL1
TAPE COUNTER DECK II
IC651 HD38702A-37
IC651
FL COUNTER CONTROLER
IC171 M5201
IC171 REC AMP
IC173 REC EQ SELECTOR
IC173 TD62555S
L171
L173
L175 6.8mH
L177 2.7mH
SFR 171
REC/PB LEVEL ADJ. (DECK I)
SFR 173
REC/PB LEVEL ADJ. (DECK II)
Q173
REC MUTE (DECK II)
Q171
REC MUTE (DECK I)
SFR 321
REC/PB FREQ. SENSITIVITY ADJ. (DECK I)
SFR 323
REC/PB FREQ. SENSITIVITY ADJ. (DECK II)
Q171 Q173 2SC2001K
D459 1SS177
D460 1SS177
O.REC MUTE
RCH
RY553 G2V-2
RPH-1 (EH)
RPH-2 (EH)
COIL OSC L321
Q324.Q325 2SC2001K X2
Q324.325
BIAS OSC
Q321
VOLTAGE CONTROL
Q322 2SC1815GR
Q323 2SC1815GR
D403~D412 1SS177
Q401~Q405 2SA1015GR
Q406 2SC1815GR
REC I
REC II
GND b8 D1
CrO II b7 D16
MT II b6 D15
CR I b5 D17
MT I b4 D18



8
9
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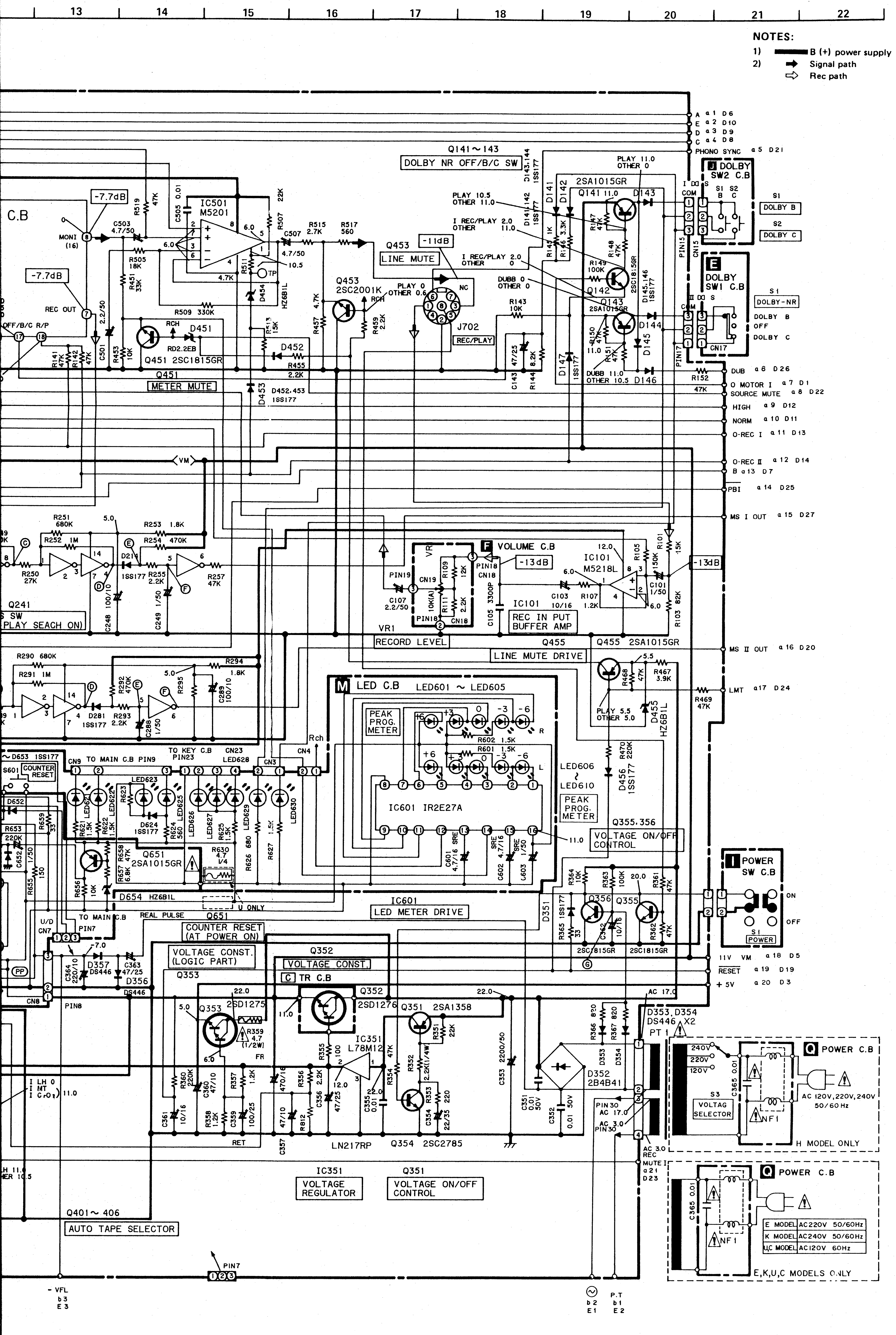
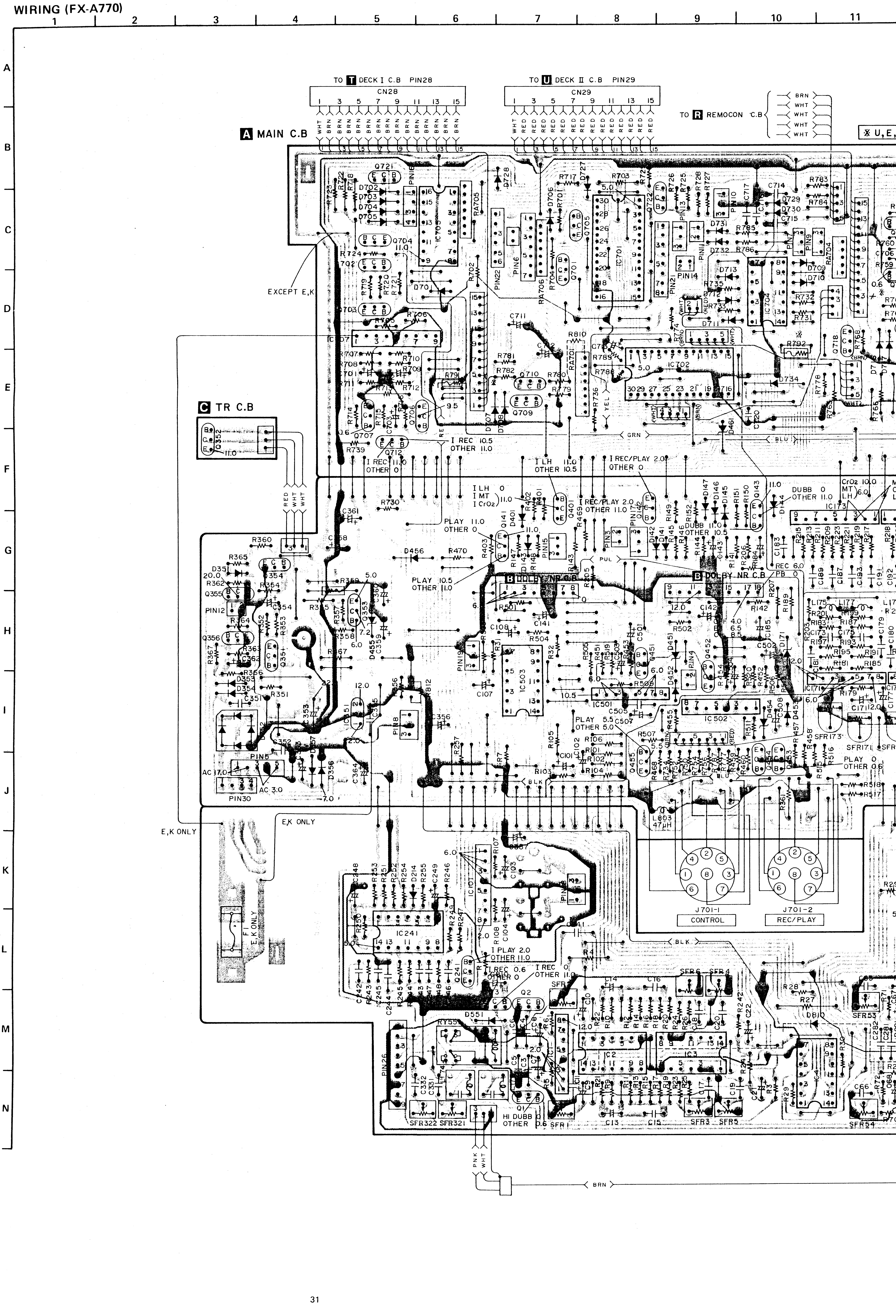
12
13
14
15
16
17
18
19
B DOLBY C.B
IC501 M5201
IC503 TC4066
-33dB
-7.7dB
-11dB
Q141~143
DOLBY NR OFF/B/C SW
Q453 LINE MUTE
Q453 2SC2001K
J702 REC/PLAY
Q451 2SC1815GR
Q451 METER MUTE
SFR 3 PB FREQ. ADJ. (DECK I)
SFR 5 HI-DUB FREQ. ADJ.
IC241 MS AMP (DECK I)
IC241 μPD4069
Q241 P.MS SW (AT P.MS PLAY SEACH ON)
2SA1015GR
IC281 MS AMP(DECK II)
IC281 μPD4069
F VOLUME C.B
-13dB
IC101 M5218L
VR1 RECORD LEVEL
IC101 REC IN PUT BUFFER AMP
Q455 LINE MUTE DRIVE
M LED C.B
LED601 ~ LED605
PEAK PROG. METER
IC601 IR2E27A
IC601 LED METER DRIVE
LED606 ~ LED610
PEAK PROG. METER
L COUNTER C.B
4ST-01ZS1 FL1
TAPE COUNTER DECKII
D651~D653 1SS177
S601 COUNTER RESET
TO MAIN C.B PIN9
TO KEY C.B PIN23
Q651 2SA1015GR
IC651 HD38702A-37
D654 HZ6B1L
U ONLY
REAL PULSE
Q651 COUNTER RESET (AT POWER ON)
IC651 FL COUNTER CONTROLER
VOLTAGE CONST. (LOGIC PART)
Q353
Q352 VOLTAGE CONST.
C TR C.B
Q353 2SD1275
Q352 2SD1276
Q351 2SA1358
IC351 L78M12
LN217RP
Q354 2SC2785
D352 2B4B4
IC351 VOLTAGE REGULATOR
Q351 VOLTAGE ON/OFF CONTROL
Q401~Q405 2SA1015GR
Q406 2SC1815GR
Q401~406 AUTO TAPE SELECTOR
REC I
PIN7
CrO II b7 D16
MT II b6 D15
CR I b5 D17
MT I b4 D18
- VFL b3 E3

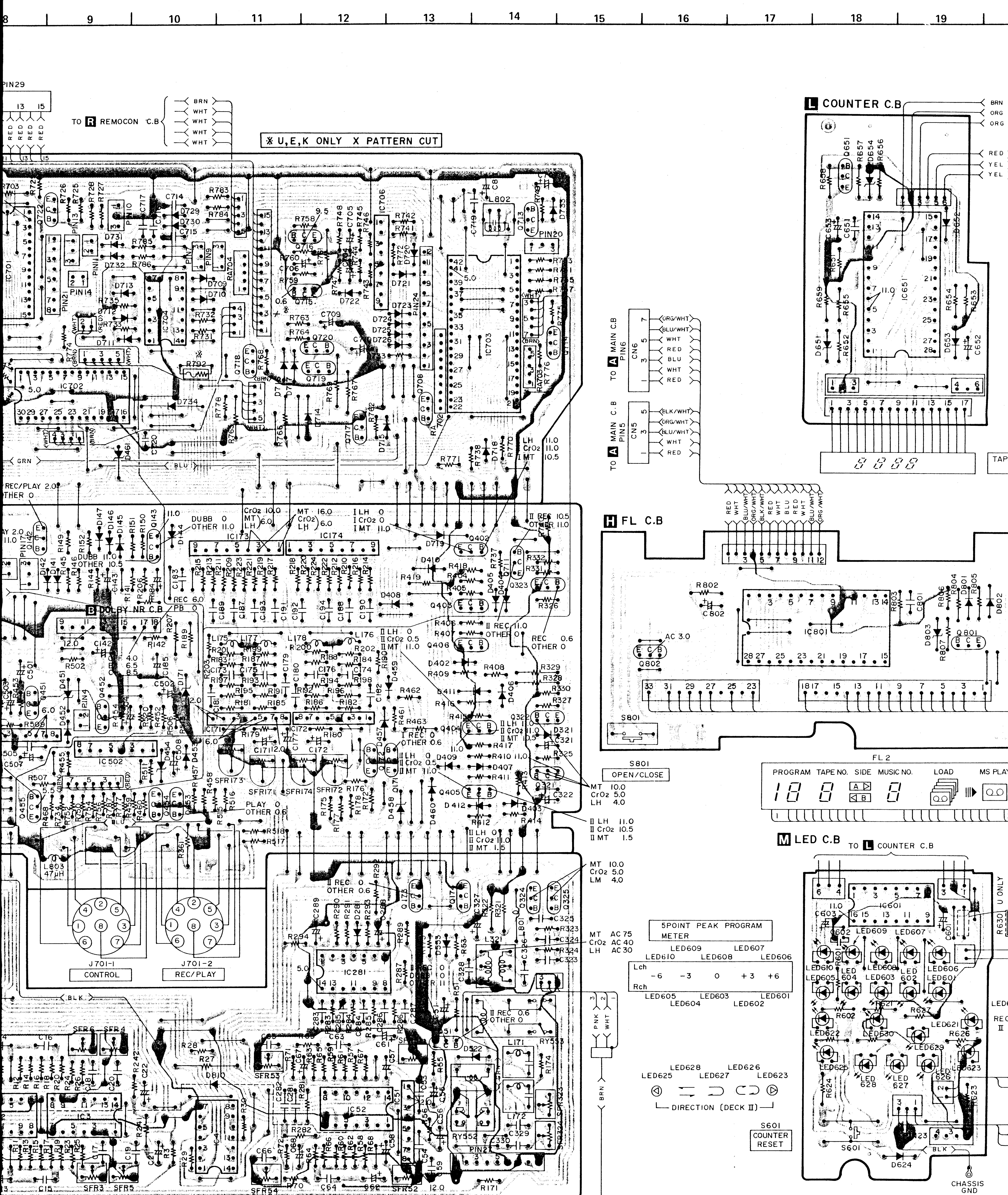

13
14
15
16
17
18
19
20
21
22
IC501 M5201
-7.7dB
Q141 ~ 143
DOLBY NR OFF/B/C SW
Q453
LINE MUTE
Q453 2SC2001K
J702
REC/PLAY
Q451
METER MUTE
Q451 2SC1815GR
D452, 453 1SS177
J DOLBY SW2 C.B
E DOLBY SW1 C.B
DOLBY B
DOLBY C
DOLBY-NR
OFF
PHONO SYNC
DUB
O MOTOR I
SOURCE MUTE
HIGH
NORM
O-REC I
O-REC II
PBI
MS I OUT
MS II OUT
LMT
F VOLUME C.B
-13dB
IC101 M5218L
IC101
REC IN PUT BUFFER AMP
VR1
RECORD LEVEL
Q455
LINE MUTE DRIVE
Q455 2SA1015GR
M LED C.B
LED601 ~ LED605
PEAK PROG. METER
IC601 IR2E27A
LED606 ~ LED610
IC601
LED METER DRIVE
Q355, 356
VOLTAGE ON/OFF CONTROL
I POWER SW C.B
ON
OFF
S1 POWER
Q241
PLAY SEACH ON)
Q651 2SA1015GR
Q651
COUNTER RESET (AT POWER ON)
VOLTAGE CONST. (LOGIC PART)
Q352
VOLTAGE CONST.
C TR C.B
Q353
Q352 2SD1276
Q351 2SA1358
IC351 L78M12
Q354 2SC2785
LN217RP
IC351
VOLTAGE REGULATOR
Q351
VOLTAGE ON/OFF CONTROL
Q401 ~ 406
AUTO TAPE SELECTOR
D352 2B4B41
D353, D354 DS446 X2
PT 1
Q POWER C.B
240V
220V
120V
S3 VOLTAG SELECTOR
NF1
AC 120V, 220V, 240V 50/60Hz
H MODEL ONLY
E MODEL AC220V 50/60Hz
K MODEL AC240V 50/60Hz
U,C MODEL AC120V 60Hz
E,K,U,C MODELS ONLY
11V VM
RESET
+5V
PIN7
- VFL
P.T

NOTES:

1) ▬ B (+) power supply
2) ➡ Signal path
⇨ Rec path

WIRING (FX-A770)


1 2 3 4 5 6 7 8 9 10 11
A B C D E F G H I J K L M N
TO T DECK I C.B PIN28
CN28
TO U DECK II C.B PIN29
CN29
TO R REMOCON C.B
BRN
WHT
RED
※ U,E,
A MAIN C.B
C TR C.B
B DOLBY NR C.B
EXCEPT E,K
E,K ONLY
IC705
IC701
IC702
IC704
IC707
IC501
IC502
IC503
IC171
IC173
IC101
IC241
IC2
IC3
J701-1
CONTROL
J701-2
REC/PLAY
L803
47μH
RY551
GRN
BLU
BLK
YEL
PUL
I REC 10.5
OTHER 11.0
I LH 11.0
OTHER 10.5
I REC/PLAY 2.0
OTHER 0
PLAY 11.0
OTHER 0
PLAY 10.5
OTHER 11.0
DUBB 0
OTHER 11.0
I PLAY 2.0
OTHER 11.0
HI DUBB 0
OTHER 0.6
PIN5
PIN30
AC 17.0
AC 3.0
SFR322
SFR321
SFR1
SFR3
SFR5
SFR53
SFR54
PNK
WHT
BRN


8 9 10 11 12 13 14 15 16 17 18 19
PIN29
TO R REMOCON C.B
BRN
WHT
※U,E,K ONLY X PATTERN CUT
L COUNTER C.B
IC651
IC702
IC703
IC704
B DOLBY NR C.B
IC171
IC172
IC173
IC174
IC502
IC281
IC52
REC/PLAY 2.0
OTHER 0
DUBB 0
OTHER 11.0
REC 6.0
PB 0
PLAY 0
OTHER 0.6
MT 10.0
CrO2 5.0
LH 4.0
II LH 11.0
II CrO2 10.5
II MT 1.5
MT AC75
CrO2 AC 40
LH AC30
L803 47μH
J701-1
CONTROL
J701-2
REC/PLAY
TO A MAIN C.B PIN6 CN6
TO A MAIN C.B PIN5 CN5
H FL C.B
IC801
S801
OPEN/CLOSE
FL 2
PROGRAM
TAPE NO.
SIDE
MUSIC NO.
LOAD
MS PLAY
TAP
M LED C.B
TO L COUNTER C.B
IC601
U ONLY
5POINT PEAK PROGRAM METER
Lch
Rch
-6
-3
0
+3
+6
DIRECTION (DECK II)
S601
COUNTER RESET
CHASSIS GND

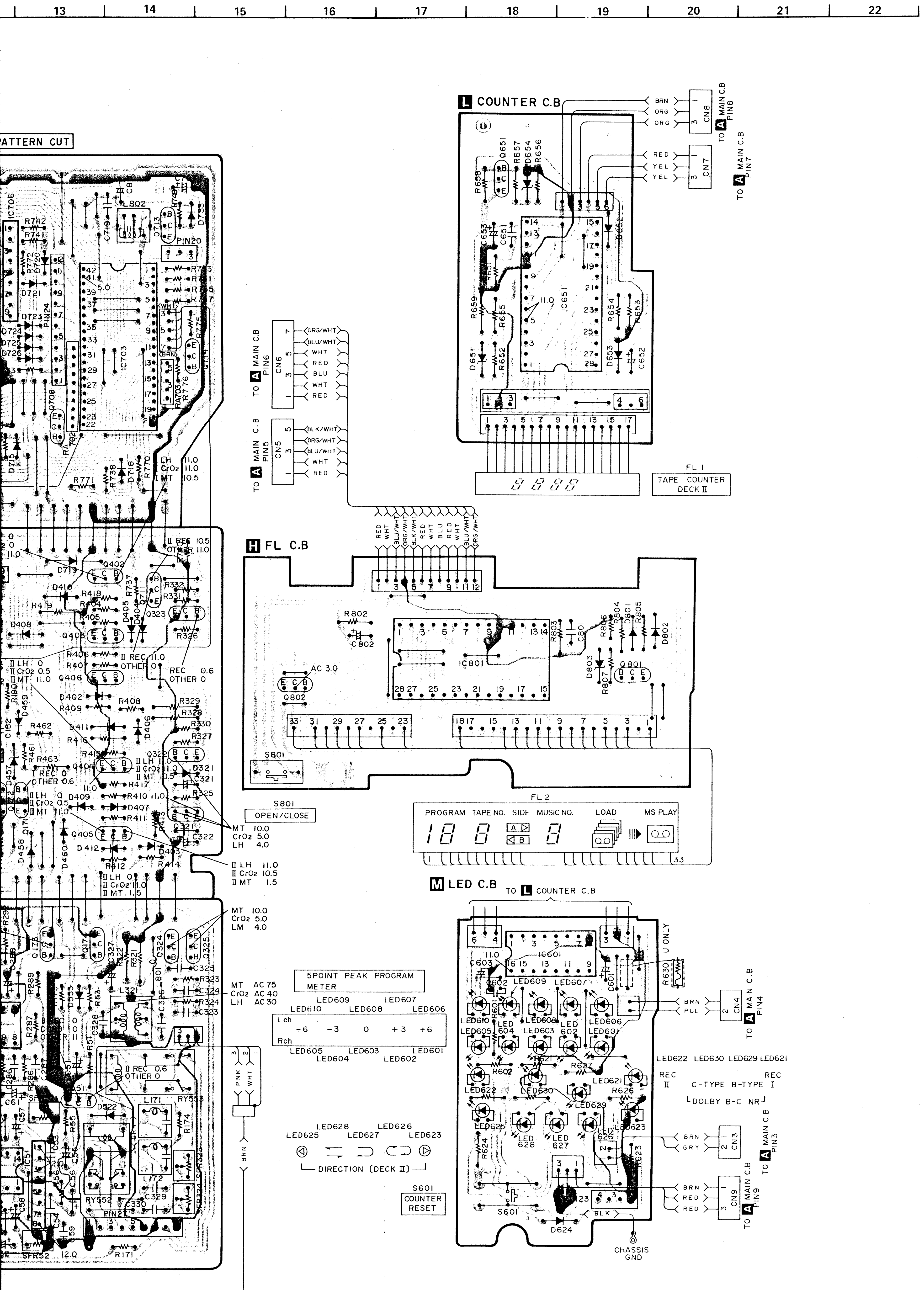
NOTES (1) ▬ Earth pattern

The voltage is the ref

tster (20k ohms/V DC

An asterisk (*) indicate

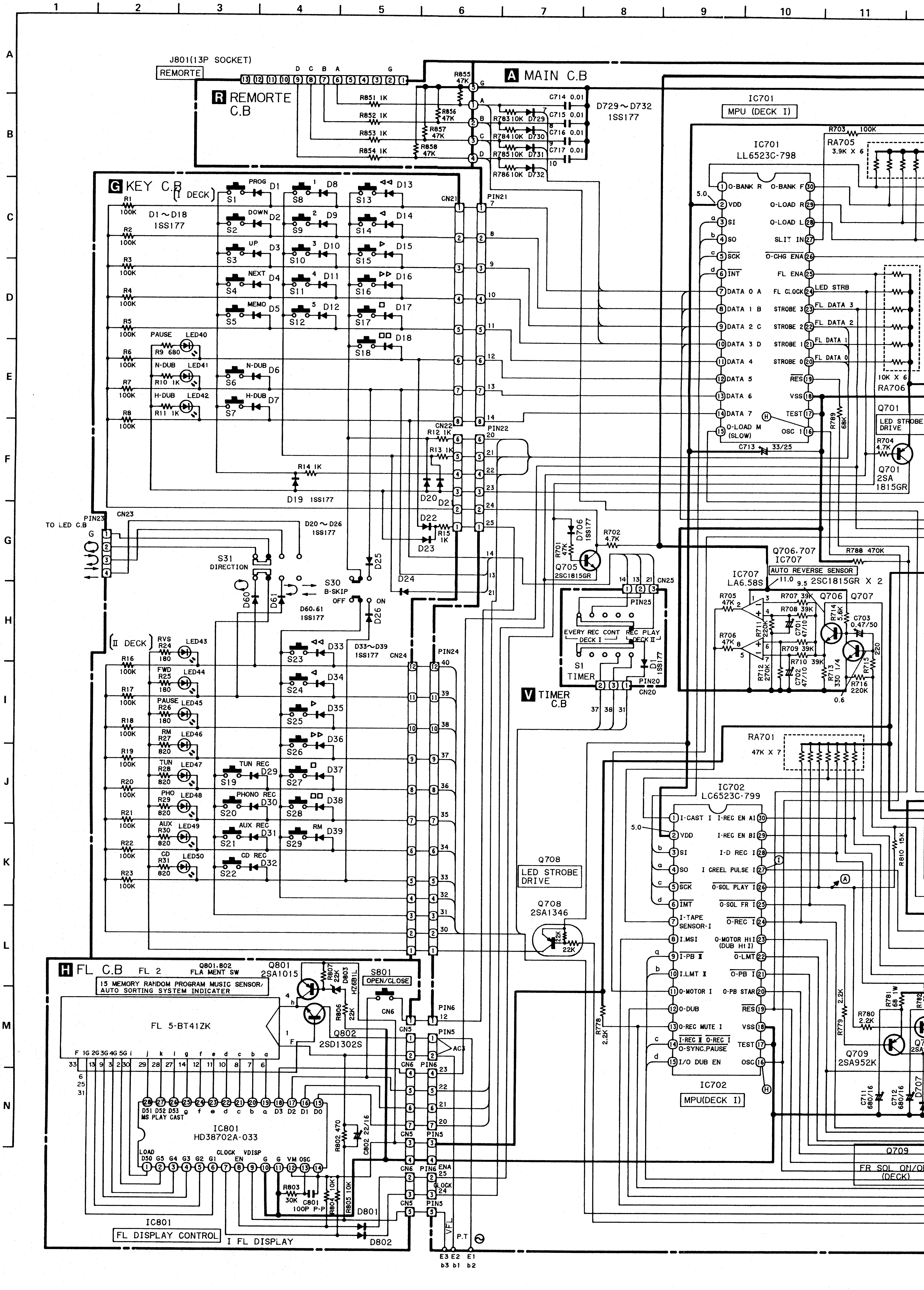
with a vacuum-tube vol



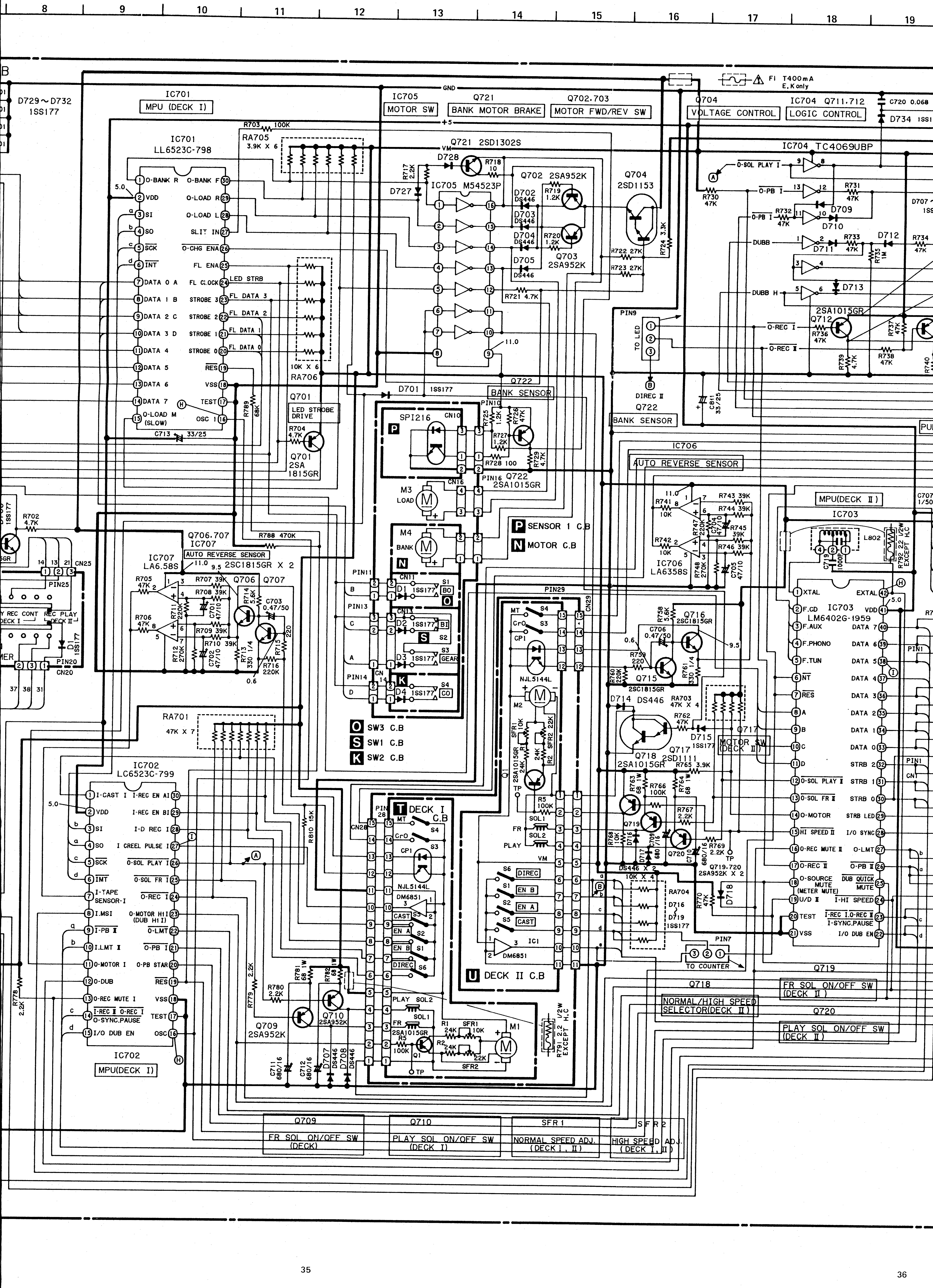
13
14
15
16
17
18
19
20
21
22
PATTERN CUT
L COUNTER C.B
TO A MAIN C.B PIN8
CN8
BRN
ORG
ORG
TO A MAIN C.B PIN7
CN7
RED
YEL
YEL
IC651
Q651
FL 1
TAPE COUNTER DECK II
TO A MAIN C.B PIN6
CN6
ORG/WHT
BLU/WHT
WHT
RED
BLU
WHT
RED
TO A MAIN C.B PIN5
CN5
BLK/WHT
ORG/WHT
BLU/WHT
WHT
RED
IC703
H FL C.B
IC801
Q801
Q802
AC 3.0
S801
S801 OPEN/CLOSE
FL 2
PROGRAM
TAPE NO.
SIDE
MUSIC NO.
LOAD
MS PLAY
MT 10.0
CrO2 5.0
LH 4.0
II LH 11.0
II CrO2 10.5
II MT 1.5
MT 10.0
CrO2 5.0
LM 4.0
MT AC 75
CrO2 AC 40
LH AC 30
M LED C.B
TO L COUNTER C.B
IC601
U ONLY
5POINT PEAK PROGRAM METER
LED609
LED607
LED610
LED608
LED606
Lch
-6
-3
0
+3
+6
Rch
LED605
LED603
LED601
LED604
LED602
TO A MAIN C.B PIN4
CN4
BRN
PUL
LED622 LED630 LED629 LED621
REC II
C-TYPE B-TYPE
REC I
DOLBY B-C NR
TO A MAIN C.B PIN3
CN3
BRN
GRY
TO A MAIN C.B PIN9
CN9
BRN
RED
RED
LED628
LED626
LED625
LED627
LED623
DIRECTION (DECK II)
S601 COUNTER RESET
S601
D624
BLK
CHASSIS GND
PNK
WHT
BRN
RY552
RY553
12.0
R171

NOTES (1) ▬ Earth pattern ▭ Others pattern
The voltage is the reference value measured with a tster (20k ohms/V DC) when there are no signals. An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.

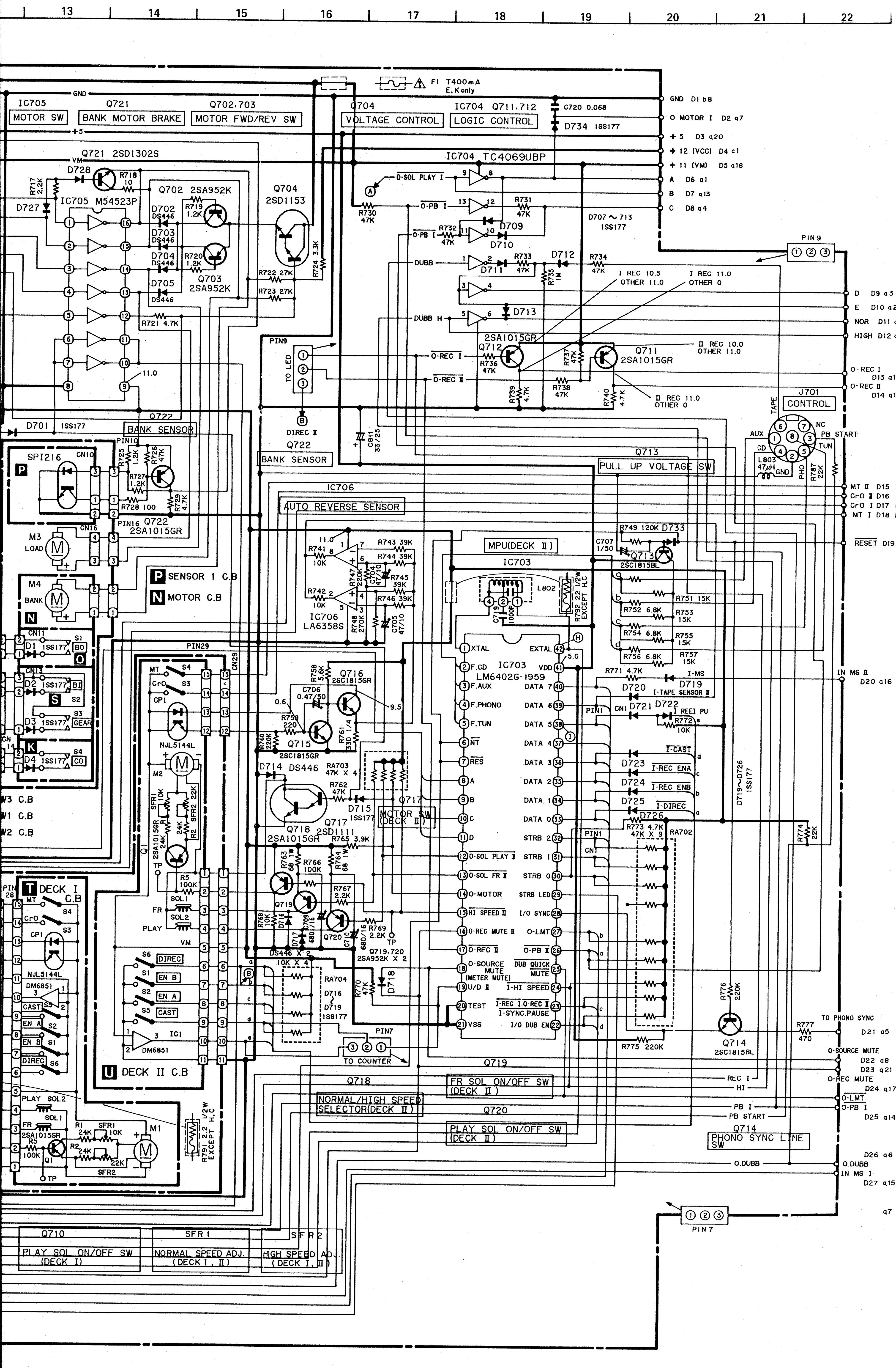
SCHEMATIC DIAGRAM (FX-A770)



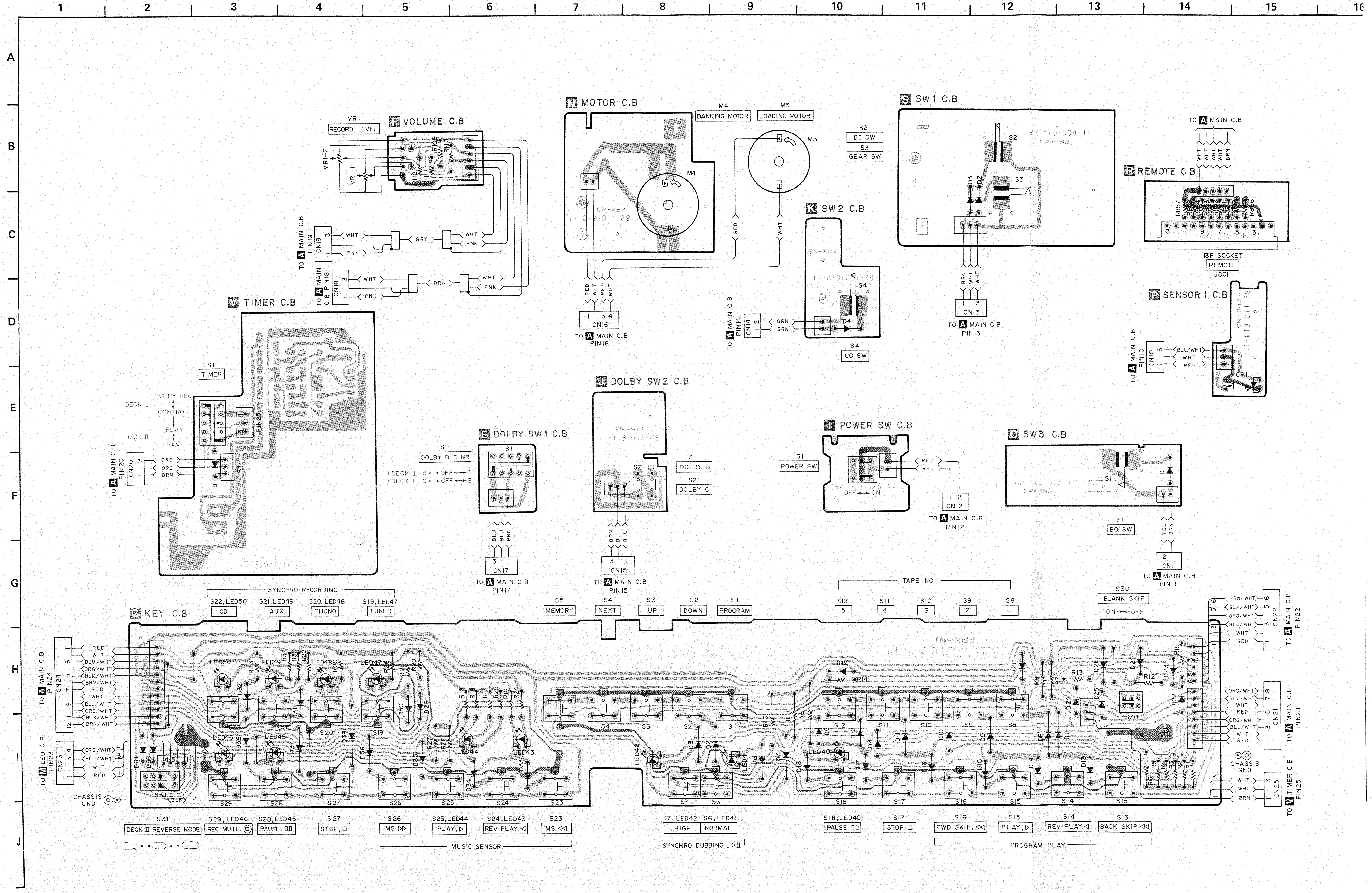
1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G
H
I
J
K
L
M
N
J801(13P SOCKET)
REMORTE
R REMORTE C.B
A MAIN C.B
G KEY C.B
(I DECK)
(II DECK)
H FL C.B
V TIMER C.B
R851 1K
R852 1K
R853 1K
R854 1K
R855 47K
R856 47K
R857 47K
R858 47K
C714 0.01
C715 0.01
C716 0.01
C717 0.01
D729~D732 1SS177
R783 10K
R784 10K
R785 10K
R786 10K
D1~D18 1SS177
PROG
DOWN
UP
NEXT
MEMO
PAUSE
N-DUB
H-DUB
LED40
LED41
LED42
R9 680
R10 1K
R11 1K
R12 1K
R13 1K
R14 1K
R15 1K
D19 1SS177
D20~D26 1SS177
CN21
CN22
CN23
CN24
CN25
PIN21
PIN22
PIN23
PIN24
PIN25
TO LED C.B
S31 DIRECTION
S30 B-SKIP
OFF
ON
D60.61 1SS177
D33~D39 1SS177
RVS
FWD
RM
TUN
PHO
AUX
CD
TUN REC
PHONO REC
AUX REC
CD REC
LED43
LED44
LED45
LED46
LED47
LED48
LED49
LED50
R706 47K
R701 47K
D706 1SS177
R702 4.7K
Q705 2SC1815GR
EVERY REC CONT
DECK I
REC PLAY
DECK II
S1 TIMER
PIN20
CN20
Q708 LED STROBE DRIVE
Q708 2SA1346
IC701
MPU (DECK I)
IC701 LL6523C-798
R703 100K
RA705 3.9K X 6
O-BANK R
VDD
SI
SO
SCK
INT
DATA 0 A
DATA 1 B
DATA 2 C
DATA 3 D
DATA 4
DATA 5
DATA 6
DATA 7
O-LOAD M (SLOW)
O-BANK F
O-LOAD R
O-LOAD L
SLIT IN
O-CHG ENA
FL ENA
FL CLOCK
STROBE 3
STROBE 2
STROBE 1
STROBE 0
RES
VSS
TEST
OSC 1
LED STRB
FL DATA 3
FL DATA 2
FL DATA 1
FL DATA 0
10K X 6
RA706
R789 68K
C713 33/25
Q701 LED STROBE DRIVE
R704 4.7K
Q701 2SA 1815GR
Q706.707 IC707
AUTO REVERSE SENSOR
R788 470K
IC707 LA6.58S
2SC1815GR X 2
R705 47K
R707 39K
R708 39K
R709 39K
R710 39K
R711 220K
R712 270K
R713 330 1/4
R714 5.6K
R715 220
R716 220K
C701 47/10
C702 47/10
C703 0.47/50
Q706
Q707
RA701 47K X 7
IC702 LC6523C-799
I-CAST I
VDD
SI
SO
SCK
INT
I-TAPE SENSOR-I
I.MSI
I-PB II
I.LMT II
O-MOTOR I
O-DUB
O-REC MUTE I
I-REC II O-REC I
O-SYNC.PAUSE
I/O DUB EN
I-REC EN AI
I-REC EN BI
I-D REC I
I CREEL PULSE I
O-SOL PLAY I
O-SOL FR I
O-REC I
O-MOTOR HI I (DUB HI I)
O-LMT
O-PB I
O-PB STAR
RES
VSS
TEST
OSC
IC702 MPU(DECK I)
R778 2.2K
R779 2.2K
R780 2.2K
R781 68 1W
R810 15K
Q709 2SA952K
C711 680/16
C712 680/16
Q709 FR SOL ON/O (DECK)
Q801.802 FLA MENT SW
Q801 2SA1015
Q802 2SD1302S
R806 22K
R807 22K
D803 HZ6B1L
S801 OPEN/CLOSE
15 MEMORY RANDOM PROGRAM MUSIC SENSOR/ AUTO SORTING SYSTEM INDICATER
FL 2
FL 5-BT41ZK
IC801 HD38702A-033
LOAD
CLOCK
VDISP
EN
VM OSC
R802 470
C802 22/16
R803 30K
C801 100P P-P
R804 10K
R805 10K
D801
D802
IC801
FL DISPLAY CONTROL
I FL DISPLAY
CN5
CN6
PIN5
PIN6
ENA
CLOCK
AC3
VFL
P.T
E3 E2 E1
b3 b1 b2



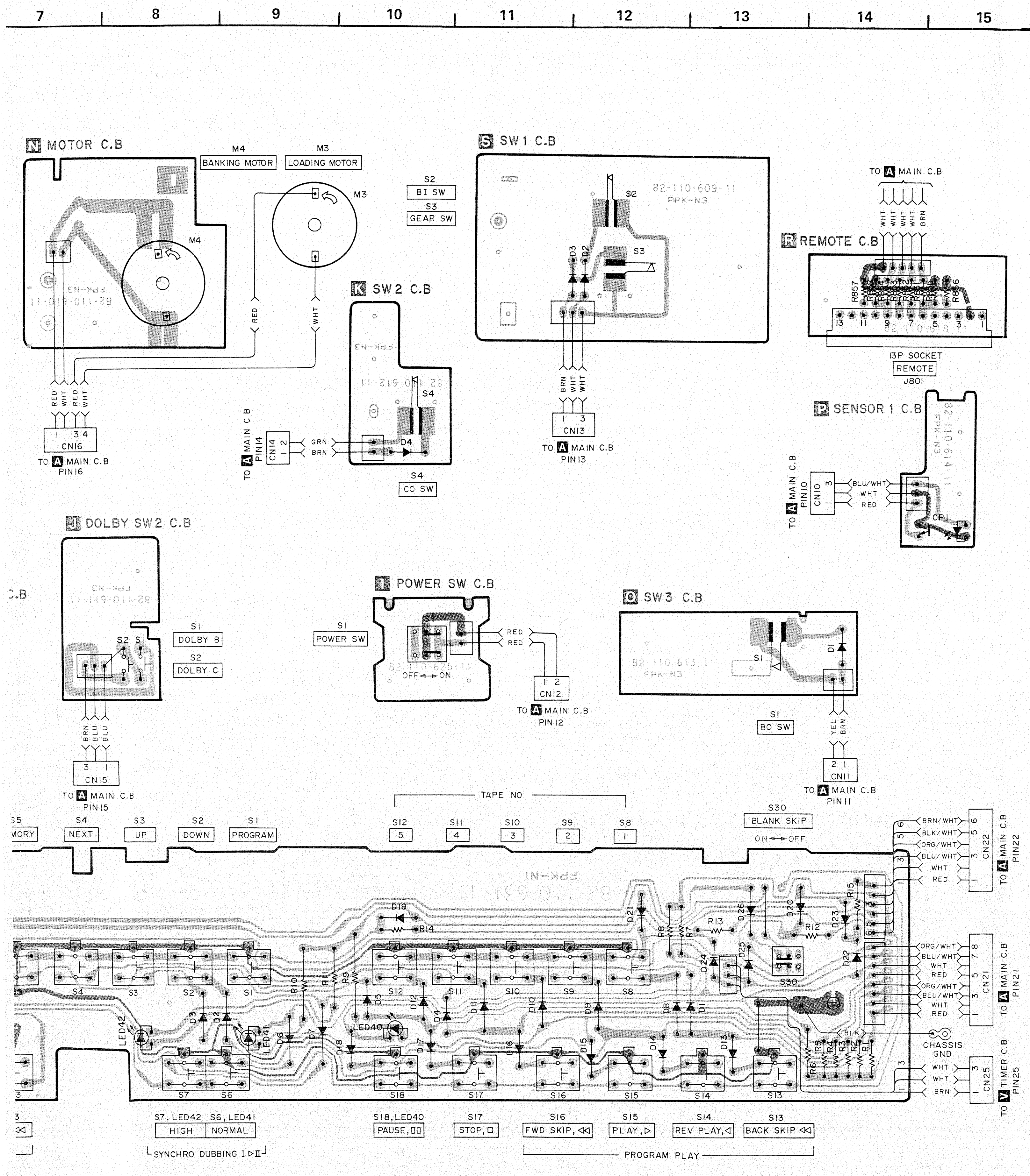
8
9
10
11
12
13
14
15
16
17
18
19
B
D729～D732
1SS177
IC701
MPU (DECK I)
IC701
LL6523C-798
IC705
MOTOR SW
Q721
BANK MOTOR BRAKE
Q702.703
MOTOR FWD/REV SW
Q704
VOLTAGE CONTROL
IC704 Q711.712
LOGIC CONTROL
FI T400mA
E.K only
C720 0.068
D734 1SS
GND
+5
VM
R703 100K
RA705
3.9K X 6
Q721 2SD1302S
D728
R718 10
R717 2.2K
D727
IC705 M54523P
Q702 2SA952K
R719 1.2K
D702 DS446
D703 DS446
D704 DS446
R720 1.2K
Q703
2SA952K
D705 DS446
R721 4.7K
Q704
2SD1153
R722 27K
R723 27K
R724 3.3K
IC704 TC4069UBP
O-SOL PLAY I
O-PB I
R730 47K
R731 47K
R732 47K
D709
D710
DUBB
D711
R733 47K
D712
R734 47K
R735 1M
DUBB H
D713
2SA1015GR
Q712
R736 47K
R737 47K
R738 47K
R739 4.7K
O-REC I
O-REC II
PIN9
TO LED
DIREC II
Q722
BANK SENSOR
C811 33/25
O-BANK R
O-BANK F
VDD
O-LOAD R
SI
O-LOAD L
SO
SLIT IN
SCK
O-CHG ENA
INT
FL ENA
DATA 0 A
FL CLOCK
LED STRB
DATA 1 B
STROBE 3
FL DATA 3
DATA 2 C
STROBE 2
FL DATA 2
DATA 3 D
STROBE 1
FL DATA 1
DATA 4
STROBE 0
FL DATA 0
DATA 5
RES
DATA 6
VSS
DATA 7
TEST
O-LOAD M (SLOW)
OSC 1
10K X 6
RA706
R789 68K
C713 33/25
Q701
LED STROBE DRIVE
R704 4.7K
Q701
2SA 1815GR
D701 1SS177
Q722
BANK SENSOR
SPI216
CN10
PIN10
R725 1.2K
R726 47K
R727 1.2K
R728 100
R729 4.7K
PIN16
Q722
2SA1015GR
CN16
M3
LOAD
M4
BANK
P SENSOR 1 C.B
N MOTOR C.B
IC706
AUTO REVERSE SENSOR
R741 10K
R742 10K
R743 39K
R744 39K
R745 39K
R746 39K
R747 220K
R748 270K
C704 47/10
C705 47/10
IC706
LA6358S
MPU(DECK II)
IC703
C707 1/50
L802
C719 1000P
R792 22 1/2W EXCEPT H.C
R702 4.7K
Q706.707
IC707
AUTO REVERSE SENSOR
R788 470K
IC707
LA6358S
2SC1815GR X 2
CN25
PIN25
REC CONT DECK I
REC PLAY DECK II
D1 1SS177
PIN20
CN20
R705 47K
R706 47K
R707 39K
R708 39K
Q706
Q707
R714 5.6K
C703 0.47/50
R711 220K
C701 47/10
R709 39K
R710 39K
R712 270K
C702 47/10
R713 330 1/4
R715 220
R716 220K
PIN11
CN11
D1 1SS177
S1 BO
O
PIN13
CN13
D2 1SS177
BI
S
S2
S3
D3 1SS177
GEAR
PIN14
CN14
K
S4
D4 1SS177
CO
O SW3 C.B
S SW1 C.B
K SW2 C.B
PIN29
CN29
MT
S4
CrO
S3
CP1
NJL5144L
M2
SFR1 10K
SFR2 22K
R1 24K
R2 24K
Q1 2SA1015GR
TP
R5 100K
SOL1
SOL2
FR
PLAY
VM
S6 DIREC
S1 EN B
S2 EN A
S5 CAST
IC1
DM6851
U DECK II C.B
C706 0.47/50
Q716 2SC1815GR
R758 5.6K
R759 220
Q715
R760 220K
R761 330 1/4
2SC1815GR
D714 DS446
RA703 47K X 4
R762 47K
D715 1SS177
Q717
MOTOR SW (DECK II)
Q718 2SA1015GR
Q717 2SD1111
R765 3.9K
R763 68 1W
R766 100K
R764 68 1W
R767 2.2K
Q719
R768 10K
D716
D717
C709 680/16
Q720
C710 680/16
R769 2.2K
TP
Q719.720 2SA952K X 2
DS446 X 2
10K X 4
RA704
D716
D719 1SS177
R770 47K
D718
PIN7
TO COUNTER
XTAL
EXTAL
F.CD
IC703
VDD
LM6402G-1959
F.AUX
DATA 7
F.PHONO
DATA 6
F.TUN
DATA 5
INT
DATA 4
RES
DATA 3
A
DATA 2
B
DATA 1
C
DATA 0
D
STRB 2
O-SOL PLAY II
STRB 1
O-SOL FR II
STRB 0
O-MOTOR
STRB LED
HI SPEED II
I/O SYNC
O-REC MUTE II
O-LMT
O-REC II
O-PB II
O-SOURCE MUTE (METER MUTE)
DUB QUICK MUTE
U/D II
I-HI SPEED
TEST
I-REC I.O-REC II
I-SYNC.PAUSE
VSS
I/O DUB EN
Q719
FR SOL ON/OFF SW (DECK II)
Q718
NORMAL/HIGH SPEED SELECTOR(DECK II)
Q720
PLAY SOL ON/OFF SW (DECK II)
RA701
47K X 7
IC702
LC6523C-799
I-CAST I
I-REC EN AI
VDD
I-REC EN BI
SI
I-D REC I
SO
I CREEL PULSE I
SCK
O-SOL PLAY I
INT
O-SOL FR I
I-TAPE SENSOR-I
O-REC I
I.MSI
O-MOTOR HI I (DUB HI I)
I-PB II
O-LMT
I.LMT II
O-PB I
O-MOTOR I
O-PB STAR
O-DUB
RES
O-REC MUTE I
VSS
I-REC II O-REC I
O-SYNC.PAUSE
TEST
I/O DUB EN
OSC
IC702
MPU(DECK I)
R810 15K
R778 2.2K
R779 2.2K
R780 2.2K
R781 68 1W
R782 68 1W
Q709
2SA952K
Q710
2SA952K
C711 680/16
C712 680/16
D707 DS446
D708 DS446
PIN 28
CN28
T DECK I C.B
MT
S4
CrO
S3
CP1
NJL5144L
DM6851
S5
CAST
EN A S2
EN B S1
DIREC S6
PLAY SOL2
FR SOL1
2SA1015GR
R5 100K
Q1
TP
R1 24K
SFR1 10K
R2 24K
22K
SFR2
M1
R791 2.2 1/2W EXCEPT H.C
Q709
FR SOL ON/OFF SW (DECK)
Q710
PLAY SOL ON/OFF SW (DECK I)
SFR 1
NORMAL SPEED ADJ. (DECK I, II)
SFR 2
HIGH SPEED ADJ. (DECK I, II)


13
14
15
16
17
18
19
20
21
22
IC705
MOTOR SW
Q721
BANK MOTOR BRAKE
Q702.703
MOTOR FWD/REV SW
Q704
VOLTAGE CONTROL
IC704 Q711.712
LOGIC CONTROL
F1 T400mA
E,K only
C720 0.068
D734 1SS177
GND D1 b8
O MOTOR I D2 a7
+5 D3 a20
+12 (VCC) D4 c1
+11 (VM) D5 a18
A D6 a1
B D7 a13
C D8 a4
Q721 2SD1302S
IC704 TC4069UBP
IC705 M54523P
Q702 2SA952K
Q703 2SA952K
Q704 2SD1153
D707～713 1SS177
PIN9
D D9 a3
E D10 a2
NOR D11 a10
HIGH D12 a9
O-REC I D13 a11
O-REC II D14 a12
I REC 10.5 OTHER 11.0
I REC 11.0 OTHER 0
II REC 10.0 OTHER 11.0
II REC 11.0 OTHER 0
Q712 2SA1015GR
Q711 2SA1015GR
TO LED
DIREC II
Q722
BANK SENSOR
J701
CONTROL
TAPE
AUX
CD
NC
PB START
TUN
PHO
L803 47μH
Q713
PULL UP VOLTAGE SW
MT II D15 b6
CrO II D16 b7
CrO I D17 b5
MT I D18 b4
RESET D19 a19
IC706
AUTO REVERSE SENSOR
IC706 LA6358S
MPU(DECK II)
IC703
IC703 LM6402G-1959
L802
SP1216
P SENSOR 1 C.B
N MOTOR C.B
M3 LOAD
M4 BANK
Q722 2SA1015GR
D701 1SS177
XTAL
EXTAL
F.CD
VDD
F.AUX
DATA 7
F.PHONO
DATA 6
F.TUN
DATA 5
NT
DATA 4
RES
DATA 3
A
DATA 2
B
DATA 1
C
DATA 0
D
STRB 2
O-SOL PLAY II
STRB 1
O-SOL FR II
STRB 0
O-MOTOR
STRB LED
HI SPEED II
I/O SYNC
O-REC MUTE II
O-LMT
O-REC II
O-PB II
O-SOURCE MUTE (METER MUTE)
DUB QUICK MUTE
U/D II
I-HI SPEED
TEST
I-REC I.O-REC II I-SYNC.PAUSE
VSS
I/O DUB EN
IN MS II D20 a16
I-MS
D719
I-TAPE SENSOR II
I REC I PU
I-CAST
I-REC ENA
I-REC ENB
I-DIREC
D719～D726 1SS177
RA702
Q716 2SC1815GR
Q715 2SC1815GR
D714 DS446
Q718 2SA1015GR
Q717 2SD1111
D715 1SS177
MOTOR SW (DECK II)
Q719
Q720
Q719.720 2SA952K X 2
DS446 X 2
RA704
D716～D719 1SS177
PIN7
TO COUNTER
PIN29
CN29
NJL5144L
M2
SFR1 10K
SFR2 22K
DECK I C.B
DECK II C.B
IC1 DM6851
SOL1
SOL2
FR
PLAY
VM
DIREC
EN B
EN A
CAST
BO
BI
GEAR
CO
W3 C.B
W1 C.B
W2 C.B
Q714 2SC1815BL
TO PHONO SYNC
D21 a5
O-SOURCE MUTE
D22 a8
D23 a21
O-REC MUTE
D24 a17
O-LMT
O-PB I
D25 a14
REC I
HI
PB I
PB START
Q719 FR SOL ON/OFF SW (DECK II)
Q718 NORMAL/HIGH SPEED SELECTOR(DECK II)
Q720 PLAY SOL ON/OFF SW (DECK II)
Q714 PHONO SYNC LINE SW
O.DUBB
D26 a6
IN MS I
D27 a15
q7
PIN 7
M1
Q710 PLAY SOL ON/OFF SW (DECK I)
SFR1 NORMAL SPEED ADJ. (DECK I, II)
SFR2 HIGH SPEED ADJ. (DECK I, II)

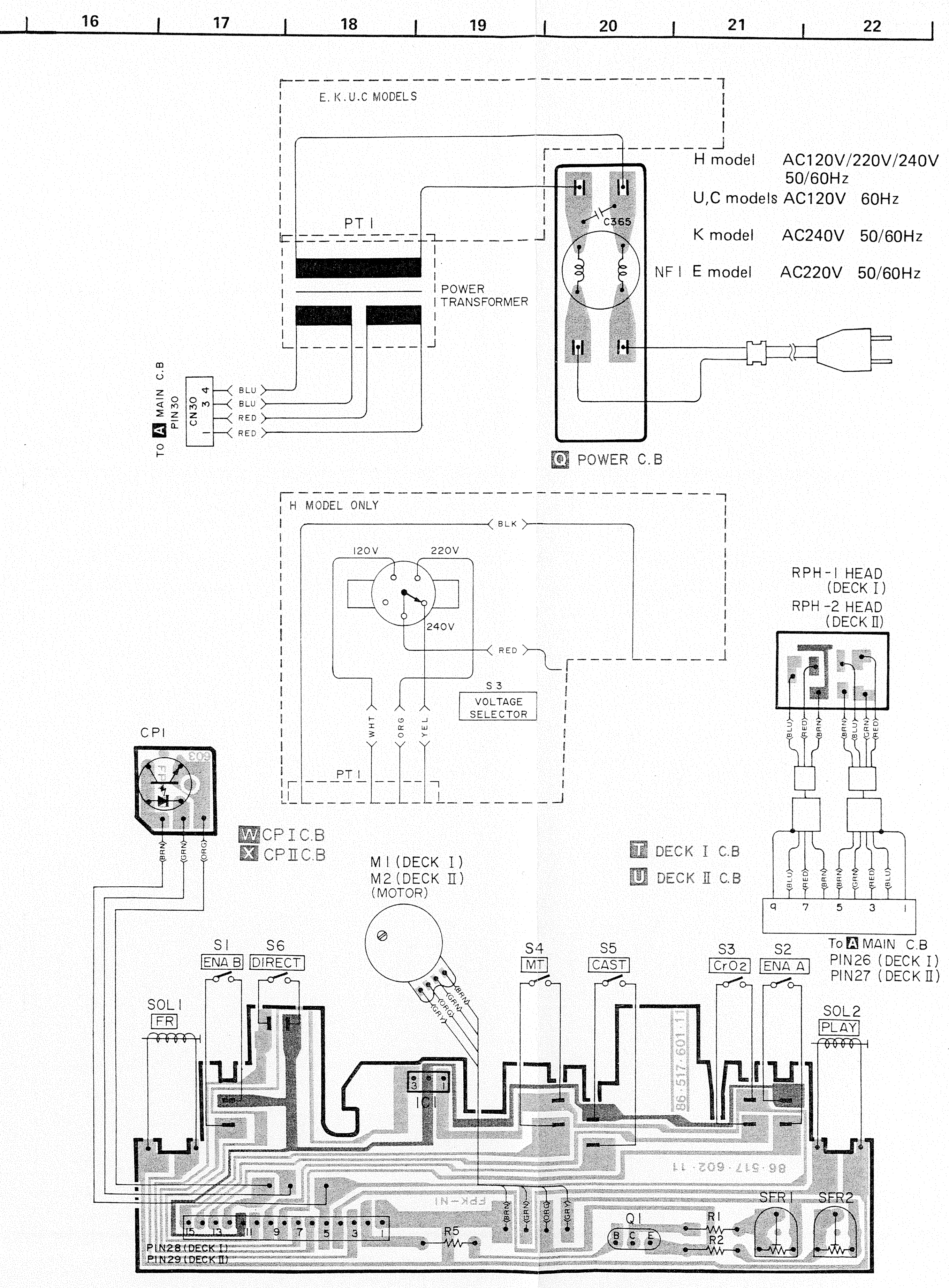
WIRING (FX-A770)



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J
F VOLUME C.B
VR1 RECORD LEVEL
VR1-2
VR1-1
R109 R110 R111 R112
TO A MAIN C.B PIN19
CN19
WHT PNK GRY
TO A MAIN C.B PIN18
CN18
WHT PNK BRN
N MOTOR C.B
M4 BANKING MOTOR
M3 LOADING MOTOR
M3 M4
82-110-610-11
FPK-N3
RED WHT RED WHT
CN16
TO A MAIN C.B PIN16
S2 B1 SW
S3 GEAR SW
RED WHT
TO A MAIN C.B PIN14
CN14
GRN BRN
K SW2 C.B
82-110-612-11
S4 D4
S4 CO SW
S SW1 C.B
82-110-609-11
FPK-N3
S2 S3 D3 D2
BRN WHT WHT
CN13
TO A MAIN C.B PIN13
TO A MAIN C.B
WHT WHT WHT WHT BRN
R REMOTE C.B
R857 R856
13 11 9 7 5 3 1
82-110-618-11
13P SOCKET
REMOTE
J801
P SENSOR 1 C.B
82-110-614-11
FPK-N3
TO A MAIN C.B PIN10
CN10
BLU/WHT WHT RED
CP1
V TIMER C.B
S1 TIMER
DECK I
DECK II
EVERY REC
CONTROL
PLAY
REC
TO A MAIN C.B PIN20
CN20
ORG ORG BRN
D1 S1 PIN25
82-110-622-11
E DOLBY SW1 C.B
S1 DOLBY B-C NR
(DECK I) B←→OFF←→C
(DECK II) C←→OFF←→B
BLU BLU BRN
CN17
TO A MAIN C.B PIN17
J DOLBY SW2 C.B
82-110-611-11
FPK-N3
S2 S1
S1 DOLBY B
S2 DOLBY C
BRN BLU BLU
CN15
TO A MAIN C.B PIN15
H POWER SW C.B
S1 POWER SW
82-110-625-11
OFF←→ON
RED RED
CN12
TO A MAIN C.B PIN12
O SW3 C.B
82-110-613-11
FPK-N3
S1 D1
S1 BO SW
YEL BRN
CN11
TO A MAIN C.B PIN11
G KEY C.B
82-110-631-11
FPK-N1
SYNCHRO RECORDING
S22, LED50 CD
S21, LED49 AUX
S20, LED48 PHONO
S19, LED47 TUNER
S5 MEMORY
S4 NEXT
S3 UP
S2 DOWN
S1 PROGRAM
TAPE NO
S12 5
S11 4
S10 3
S9 2
S8 1
S30 BLANK SKIP
ON←→OFF
TO A MAIN C.B PIN24
CN24
RED WHT BLU/WHT ORG/WHT BLK/WHT BRN/WHT RED WHT BLU/WHT ORG/WHT BLK/WHT BRN/WHT
TO M LED C.B PIN23
CN23
ORG/WHT BLU/WHT WHT RED
CHASSIS GND
TO A MAIN C.B PIN22
CN22
BRN/WHT BLK/WHT ORG/WHT BLU/WHT WHT RED
TO A MAIN C.B PIN21
CN21
ORG/WHT BLU/WHT WHT RED ORG/WHT BLU/WHT WHT RED
CHASSIS GND
TO V TIMER C.B PIN25
CN25
WHT WHT BRN
BLK
LED50 LED49 LED48 LED47 LED46 LED45 LED44 LED43 LED42 LED41 LED40
S31 DECK II REVERSE MODE
S29, LED46 REC MUTE
S28, LED45 PAUSE
S27 STOP
S26 MS
S25, LED44 PLAY
S24, LED43 REV PLAY
S23 MS
MUSIC SENSOR
S7, LED42 HIGH
S6, LED41 NORMAL
SYNCHRO DUBBING I ▷ II
S18, LED40 PAUSE
S17 STOP
S16 FWD SKIP
S15 PLAY
S14 REV PLAY
S13 BACK SKIP
PROGRAM PLAY



7
8
9
10
11
12
13
14
15
N MOTOR C.B
M4 BANKING MOTOR
M3 LOADING MOTOR
CN16
TO A MAIN C.B PIN16
S2 BI SW
S3 GEAR SW
K SW2 C.B
S4 CO SW
TO A MAIN C.B PIN14
CN14
S SW1 C.B
CN13
TO A MAIN C.B PIN13
TO A MAIN C.B
R REMOTE C.B
13P SOCKET REMOTE J801
P SENSOR 1 C.B
CN10
TO A MAIN C.B PIN10
J DOLBY SW2 C.B
S1 DOLBY B
S2 DOLBY C
CN15
TO A MAIN C.B PIN15
I POWER SW C.B
S1 POWER SW
OFF ←→ ON
CN12
TO A MAIN C.B PIN12
O SW3 C.B
S1 BO SW
CN11
TO A MAIN C.B PIN11
TAPE NO
S30 BLANK SKIP
ON ←→ OFF
S5 MEMORY
S4 NEXT
S3 UP
S2 DOWN
S1 PROGRAM
S12 5
S11 4
S10 3
S9 2
S8 1
CN22 TO A MAIN C.B PIN22
CN21 TO A MAIN C.B PIN21
CHASSIS GND
CN25 TO V TIMER C.B PIN25
S7, LED42 HIGH
S6, LED41 NORMAL
SYNCHRO DUBBING I ▷ II
S18, LED40 PAUSE, ▯▯
S17 STOP, □
S16 FWD SKIP, ◁◁
S15 PLAY, ▷
S14 REV PLAY, ◁
S13 BACK SKIP ◁◁
PROGRAM PLAY



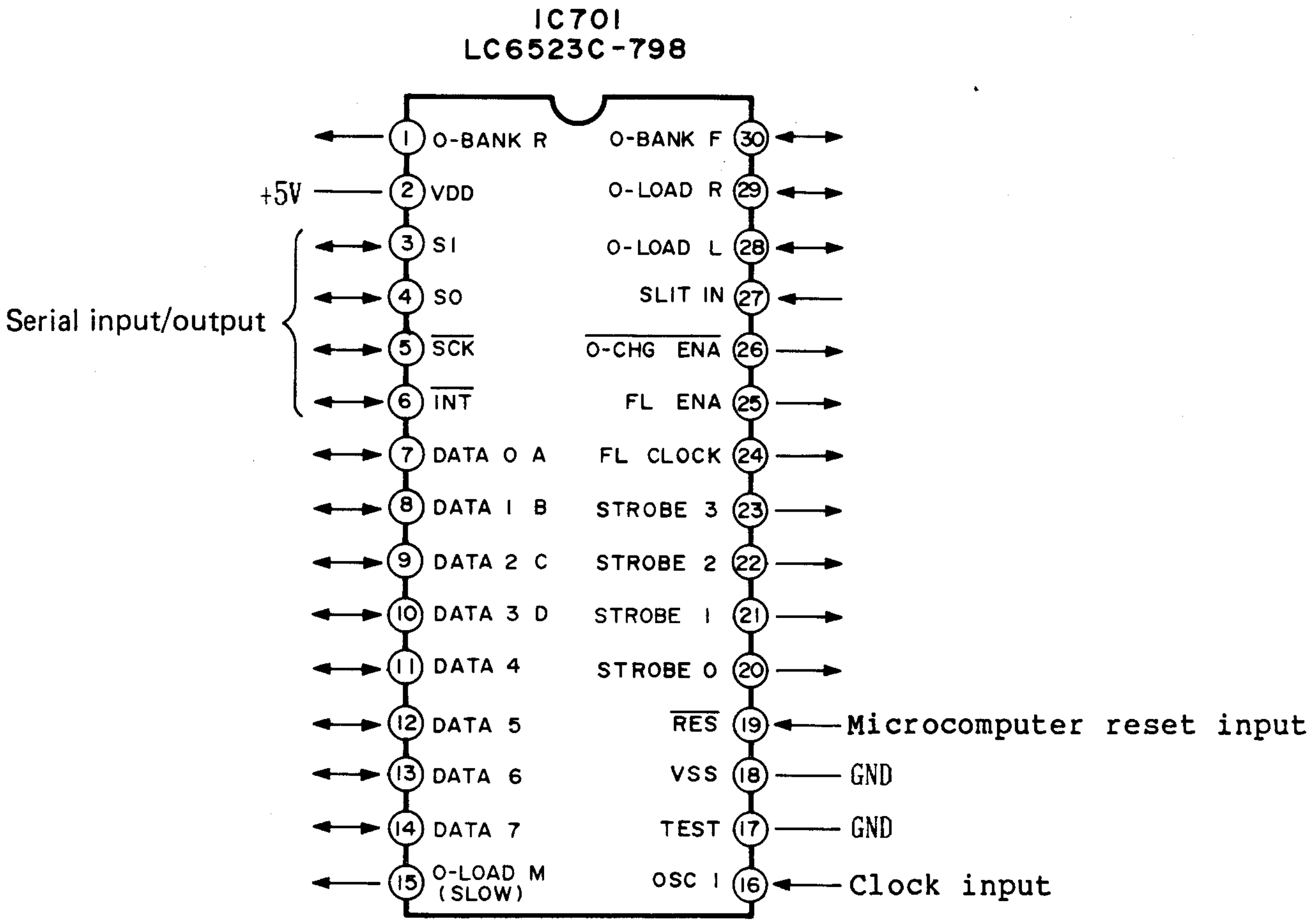
16
17
18
19
20
21
22
E.K.U.C MODELS
H model AC120V/220V/240V 50/60Hz
U,C models AC120V 60Hz
K model AC240V 50/60Hz
NF1 E model AC220V 50/60Hz
PT1 POWER TRANSFORMER
C365
Q POWER C.B
CN30
TO A MAIN C.B PIN30
H MODEL ONLY
120V
220V
240V
S3 VOLTAGE SELECTOR
RPH-1 HEAD (DECK I)
RPH-2 HEAD (DECK II)
CP1
W CP I C.B
X CP II C.B
M1 (DECK I)
M2 (DECK II)
(MOTOR)
T DECK I C.B
U DECK II C.B
TO A MAIN C.B PIN26 (DECK I) PIN27 (DECK II)
S1 ENA B
S6 DIRECT
S4 MT
S5 CAST
S3 CrO2
S2 ENA A
SOL1 FR
SOL2 PLAY
IC1
Q1
SFR1
SFR2
PIN28 (DECK I)
PIN29 (DECK II)

NOTES (1) ▬ Earth pattern ▨ Others pattern

The voltage is the reference value measured with a tster (20k ohms/V DC) when there are no signals. An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.

DISCRIPTION OF IC TERMINAL

Signal flow in the direction indicated by the arrow


IC701
LC6523C-798
O-BANK R ①
+5V VDD ②
SI ③
SO ④
SCK ⑤
INT ⑥
Serial input/output
DATA 0 A ⑦
DATA 1 B ⑧
DATA 2 C ⑨
DATA 3 D ⑩
DATA 4 ⑪
DATA 5 ⑫
DATA 6 ⑬
DATA 7 ⑭
O-LOAD M (SLOW) ⑮
O-BANK F ㉚
O-LOAD R ㉙
O-LOAD L ㉘
SLIT IN ㉗
O-CHG ENA ㉖
FL ENA ㉕
FL CLOCK ㉔
STROBE 3 ㉓
STROBE 2 ㉒
STROBE 1 ㉑
STROBE 0 ⑳
RES ⑲ Microcomputer reset input
VSS ⑱ GND
TEST ⑰ GND
OSC 1 ⑯ Clock input

IC701
LC6523C-798 (key input, changer, drive microcomputer)

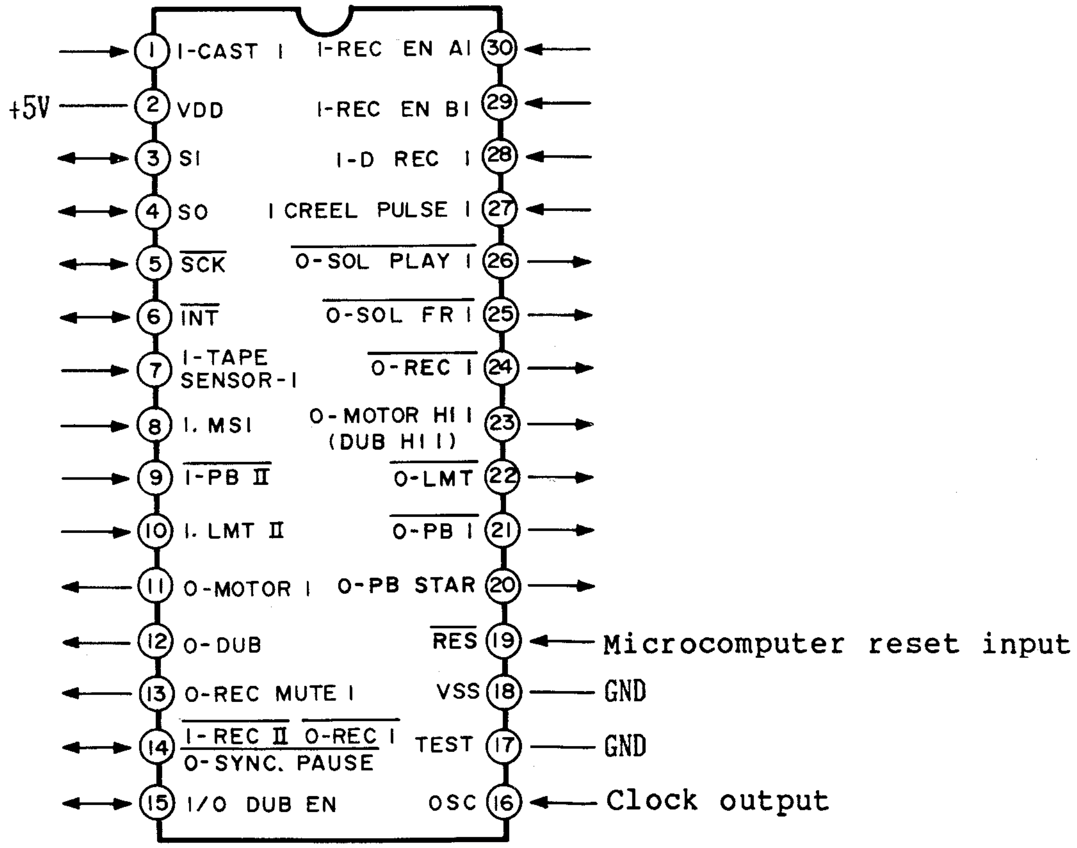
Pin No.	Pin Name	Function
1	O-BANK R	Output terminal for driving the bank motor back and forth (active "H").
3, 4 5, 6	SI, SO, SCK, INT	Serial input/output terminal for receiving or transmitting data from or to IC701 (LC6523C-799) (only these four terminals are pulled up inside a microcomputer).
7 - 14	DATA 0 - DATA 7	DATA 0 through 7 function as key inputs when they are combined with STROBE 0 through 3 (active "L"). DATA 5 through 7 drive the LED when they are combined with STRB LED. When pin 24 of FL ENA is "H" and pin 25 of FL CLOCK is "L", DATA 0 through 2 function as a remote control data input in mechanism I (active "H"). (Refer to the attached sheet.)
15	O-LOAD M (SLOW)	Output for changing the bank motor speed (SLOW "H"). Goes "L" when the loading motor is driven.
19	RES	Microprocessing unit (MPU) reset input. Reset at "L" level.
20, 21 22, 23	STROBE 0 - 3	STROBE 0 through 3 output a key input strobe signal when they are combined with DATA 0 through 7 (active "L"). FL DATA 0 through 3 output data for driving FL microcomputer IC801 (HD38702A-33) in mechanism I. (Refer to the attached sheet.)
24	FL ENA	
25	FL CLOCK	
26	O-CHG ENA	Output for turning on or off the power of the loading motor drive circuit (goes "H" during the power OFF sequence). When the output of an O-BANK R/F or O-LOAD R/L terminal goes "H" at the same time that the power is turned off, motor braking is performed; goes "L" during reset operations.
27	SLIT IN	Slit detection for detecting the bank position. Input terminal from a photosensor.
28	O-LOAD L	Output terminal for driving the loading motor to the right or left (active "H").
29	O-LOAD R	
30	O-BANK F	Output terminal for driving the bank motor back and forth (active "H").

LC6523C-798 (IC701)

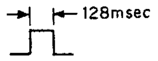
Microcomputer in mechanism I

DATA \ STROBE		20	21	22	23	24
		0	1	2	3	LED
7	0	REW	1	PROGRAM	SW-BI	——
8	1	RVS.PLAY	2	DOWN	SW-BO	——
9	2	FWD.PLAY	3	UP	SW-GEAR	——
10	3	FF	4	NEXT	SW-CO	——
11	4	STOP	5	MEMORY	——	——
12	5	PAUSE	(ADJ REC KEY)	OPEN/CLOSE	——	LED-PAUSE
13	6	SW-BLANK SKIP	TIMER/EVERY	N-DUB	——	LED-N-DUB
14	7	SW-QUICK	TIMER/CONT	Hi-DUB	——	LED-Hi-DUB

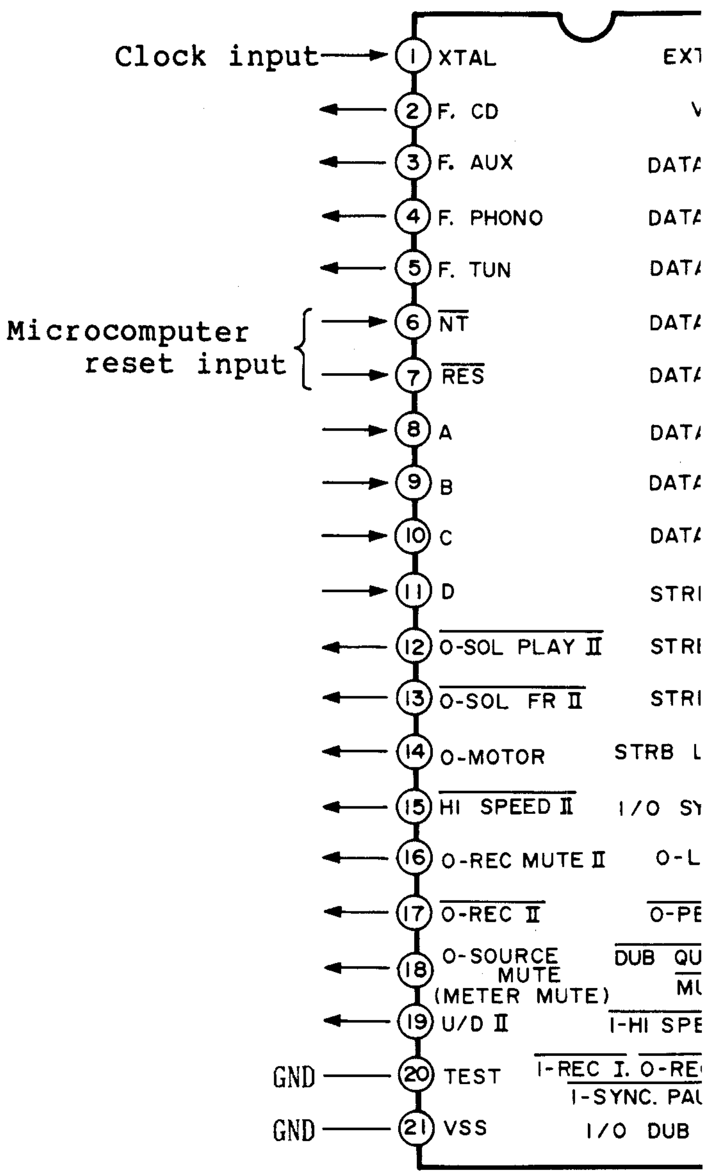
IC702
LC6523C-799


1 I-CAST I
+5V
2 VDD
3 SI
4 SO
5 SCK
6 INT
7 I-TAPE SENSOR-I
8 I. MSI
9 I-PB II
10 I. LMT II
11 O-MOTOR I
12 O-DUB
13 O-REC MUTE I
14 I-REC II O-REC I O-SYNC. PAUSE
15 I/O DUB EN
30 I-REC EN AI
29 I-REC EN BI
28 I-D REC I
27 I CREEL PULSE I
26 O-SOL PLAY I
25 O-SOL FR I
24 O-REC I
23 O-MOTOR HI I (DUB HI I)
22 O-LMT
21 O-PB I
20 O-PB STAR
19 RES
Microcomputer reset input
18 VSS
GND
17 TEST
GND
16 OSC
Clock output

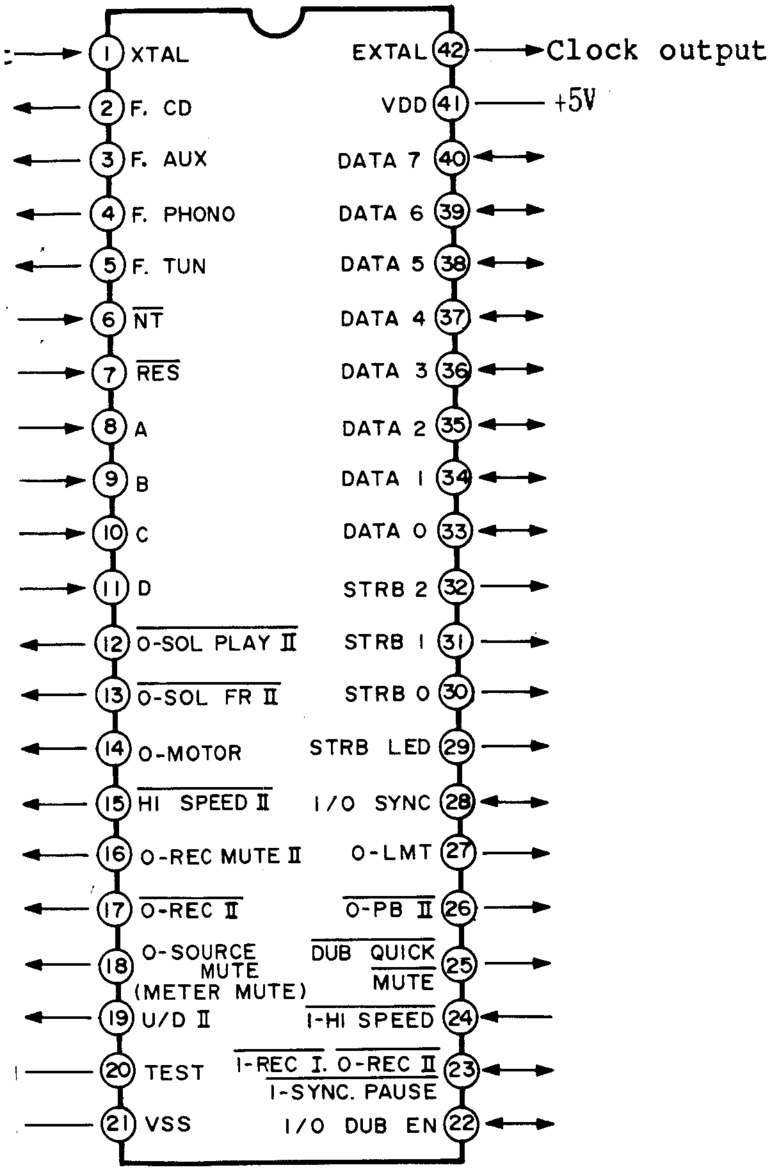
IC702
LC6523C-799 (Control microcomputer in mechanism I)

Pin No.	Pin Name	Function
1	I-CAST I	Cassette detection input in mechanism I ("L" when a cassette is loaded).
3, 4 5, 6	SI, SO, $\overline{\text{SCK}}$, $\overline{\text{INT}}$	Serial input/output terminal for data communications with IC701 LC6523C-798. (Only this port is pulled up inside a microcomputer.)
7	I-TAPE SENSOR I	Quick reverse sensor input in mechanism I ("H" is input during sensor detection).
8	I-MSI	MS signal detection input (music-free "L" is input).
9	$\overline{\text{I-PB II}}$	Input to receive O-PBII in mechanism II ("L" is output only during PLAY in mechanism II) and to produce a PB START pulse at pin 20.
10	I-LMT II	Input to receive O-LMT in mechanism II ("H" during LINE MUTE output in mechanism II), take priority in mechanism I/II, and produce an entire MUTE signal ($\overline{\text{O-LMT}}$ at pin 22) in mechanism I.
11	O-MOTOR I	Main motor ON/OFF control output terminal ("L" during motor STOP).
12	O-DUB	"H" is output during dubbing.
13	O-REC MUTE I	"L" is output only during REC and PLAY in mechanism I.
14	$\overline{\text{I-REC II}}$ $\overline{\text{O-REC I}}$ $\overline{\text{O-SYNC.PAUSE}}$	$\overline{\text{I-REC II}}$: When $\overline{\text{O-REC I}}$ is not output except during dubbing, $\overline{\text{O-REC II}}$ in mechanism II is received as an input to control $\overline{\text{O-LMT}}$ output at pin 22 at its leading edge. $\overline{\text{O-REC I}}$: When mechanism I enters the REC mode, "L" is output. As a result, the TUN-REC indicator lamp in mechanism II lights. $\overline{\text{O-SYNC.PAUSE}}$: "L" is output during dubbing PAUSE. "H" is output during dubbing PLAY.
15	I/O DUB EN	"H" only during dubbing.
19	$\overline{\text{RES}}$	MPU reset input. Reset at "L" level.
20	O-PB.START	System PB start output terminal. Output using $\overline{\text{O-PB II}}$ in mechanism II, and mechanism I. "L" during reset operation. 
21	$\overline{\text{O-PB I}}$	Audio control output. "L" is output only during PLAY; "L" during reset operation.
22	$\overline{\text{O-LMT}}$	Line mute control signal output. "L" during muting. The priority of mechanism I/II is established for output using O-LMT II in mechanism II, and mechanism I. "L" during reset operation.
23	O-MOTOR Hi-I (O-DUB Hi)	"H" is output during dubbing at two times normal speed. Used for motor and audio controls. "L" during reset operation.
24	$\overline{\text{O-REC I}}$	"L" is output during REC in mechanism I.
25 26	$\overline{\text{O-SOL FR I}}$ $\overline{\text{O-SOL PLAY I}}$	Mechanical solenoid control output (active "L").
27	I-REEL PULSE I	Auto stop reel pulse detection input.
28	I-DIREC I	Mechanical head direction switch detection input ("L" in the forward direction).
29	I-REC EN A I	Accidental erasure protecting tab detection input ("L" when the REC mode is enabled).
30	I-REC EN B I	

IC703
LM6402G-1959


Clock input
Microcomputer reset input
1 XTAL
2 F. CD
3 F. AUX
4 F. PHONO
5 F. TUN
6 $\overline{\text{NT}}$
7 $\overline{\text{RES}}$
8 A
9 B
10 C
11 D
12 $\overline{\text{O-SOL PLAY II}}$
13 $\overline{\text{O-SOL FR II}}$
14 O-MOTOR
15 $\overline{\text{HI SPEED II}}$
16 O-REC MUTE II
17 $\overline{\text{O-REC II}}$
18 O-SOURCE MUTE (METER MUTE)
19 U/D II
20 TEST
21 VSS
GND
GND
STRB
I/O
DUB

IC703
LM6402G-1959



XTAL
EXTAL
Clock output
F. CD
VDD
+5V
F. AUX
DATA 7
F. PHONO
DATA 6
F. TUN
DATA 5
NT
DATA 4
RES
DATA 3
A
DATA 2
B
DATA 1
C
DATA 0
D
STRB 2
O-SOL PLAY II
STRB 1
O-SOL FR II
STRB 0
O-MOTOR
STRB LED
HI SPEED II
I/O SYNC
O-REC MUTE II
O-LMT
O-REC II
O-PB II
O-SOURCE MUTE (METER MUTE)
DUB QUICK MUTE
U/D II
I-HI SPEED
TEST
I-REC I. O-REC II
I-SYNC. PAUSE
VSS
I/O DUB EN
1
2
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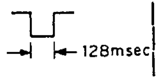
IC703
LM6402G-1959 (Control microcomputer in mechanism II)

Pin No.	Pin Name	Function
2, 3 4, 5	F-CD, F-AUX F-PHONO, F-TUN	Function select output of synchro recording amplifier (active "H"). ("H" during REC)
6 7	NT RES	MPU reset input. Reset at "L" level.
8, 9 10,11	A, B, C, D	Remote control data input terminal in mechanism II.
12, 13	O-SOL PLAY II O-SOL FRI	Mechanical solenoid control output (active "L")
14	O-MOTOR	Main motor ON/OFF control output terminal ("L" during motor STOP).
15	HI-SPEED II	"L" is output during dubbing at two times normal speed (used for motor speed selection).
16	O-REC MUTE II	REC MUTE control output terminal in mechanism II ("H" during muting).
17	O-REC II	"L" is output during REC in mechanism II.
18	O-SOURCE MUTE METER MUTE	Level meter control output terminal. "L" during REC. Logically the same as O-LMT at pin 27 except during REC.
19	U/D II	UP/DOWN count select output for electronic counter. "H" is output during UP counting; "L" is output during DOWN counting.
22	I/O DUB EN	"H" only when dubbing is enabled during dubbing.
23	I-SYNC PAUSE I-REC I O-REC II	The same as pin 14 of IC702.
24	I-Hi SPEED	High-speed dubbing detection input.
25	DUB QUICK MUTE	"L" is momentarily output when mechanism II is reversed during dubbing. Used for line muting.
26	O-PB II	"L" is output during PLAY in mechanism II. Audio control output and PB START output.
27	O-LMT	Line muting output terminal in mechanism II. "H" during muting.
28	I/O SYNC	START signal output terminal during PHONO/CD REC. PAUSE ON/OFF input terminal during PHONO/CD REC. "H" during PAUSE ON.  128msec
29	STRB LED	Key matrix and LED control output. The STROBE LED and DATA 0 through 7 light the LED (refer to the attached sheet).
30	STRB 0	When the STRB 0 is "L", data is input from the mechanism at active "H" using DATA 0 through 7.

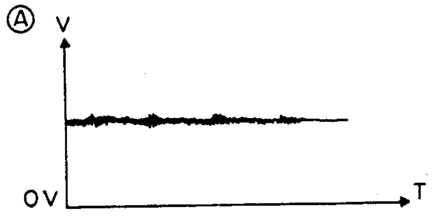
Pin No.	Pin Name	Function
31, 32	STRB 1, 2	Key matrix and key control output. Key input is done using STROBE 1, 2 and DATA 0 through 7 (refer to the attached sheet).
33 - 40	DATA 0 - 7	When DATA 0 through 7 and STRB are combined: Input of DATA 0 through 7 functions as key input (active "L"). Input of DATA 0 through 7 functions as mechanical switch input (active "H"). Output of DATA 0 through 7 functions as LED lighting output (lights at "L") (refer to the attached sheet).

LM6402G-1902 (IC703)LM6402G-1959(IC703) Microcomputer in Mechanism II

	STROBE	30	31	32	29
DATA		0	1	2	LED
33	0	I-DIREC	CD-REC	SW-B SKIP	LED-CD
34	1	I-REC EN B	AUX-REC	REC MUTE	LED-AUX
35	2	I-REC EN A	PHONO-REC	PAUSE	LED-PHONO
36	3	I-CAST	TUNER-REC	STOP	LED-TUNER
37	4	—	—	FF	LED-REC MUTE
38	5	I-REEL PULSE	—	FWD · PLAY	LED-PAUSE
39	6	I-SENSOR	⮌	RVS-PLAY	LED-FWD
40	7	I-MS II	⟲	REW	LED-RVS

WAVEFORMS

Ⓐ



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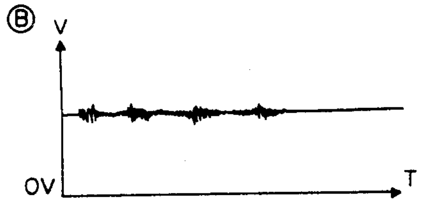

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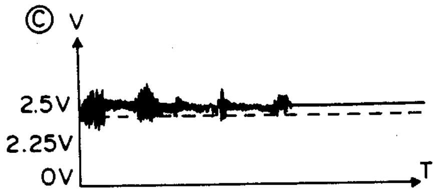

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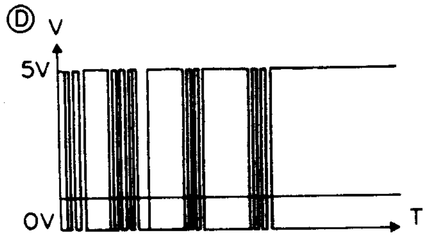

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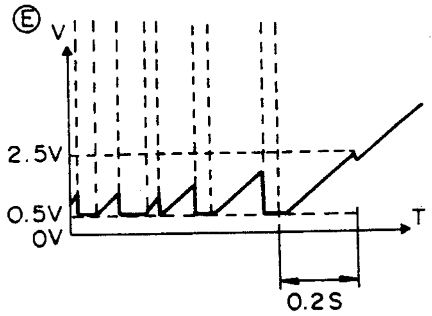

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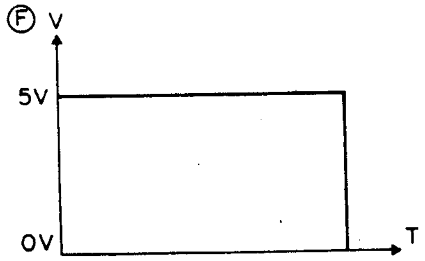

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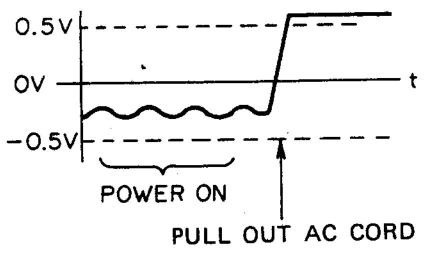

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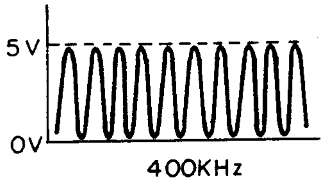

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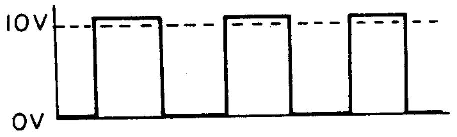
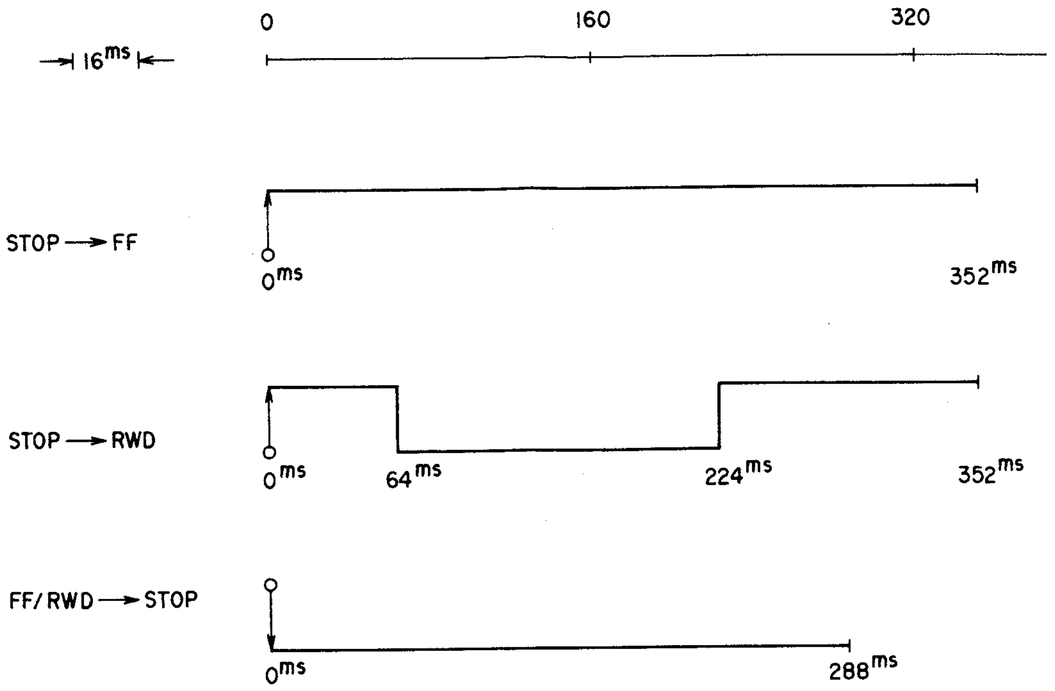
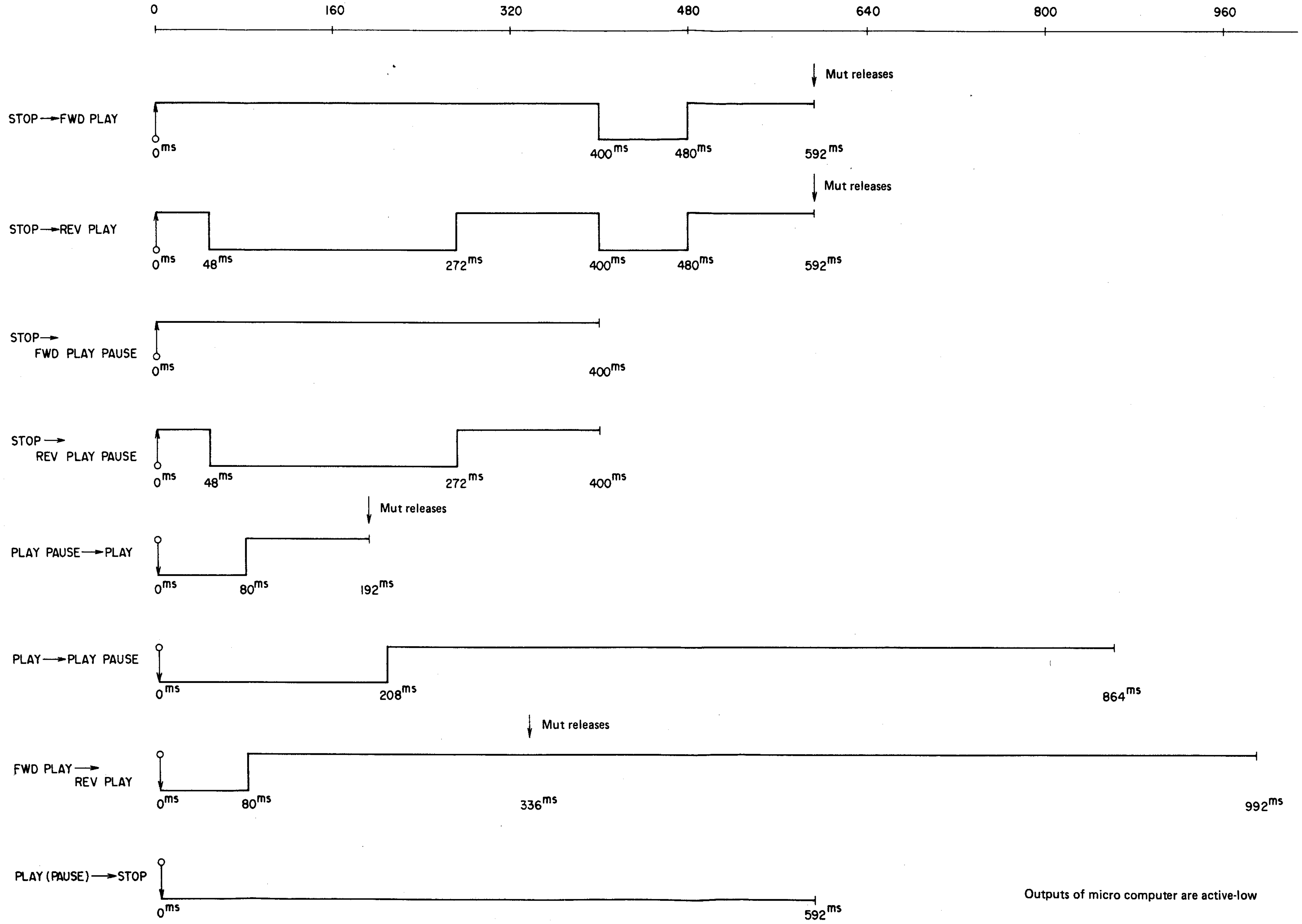


TIMMING CHART

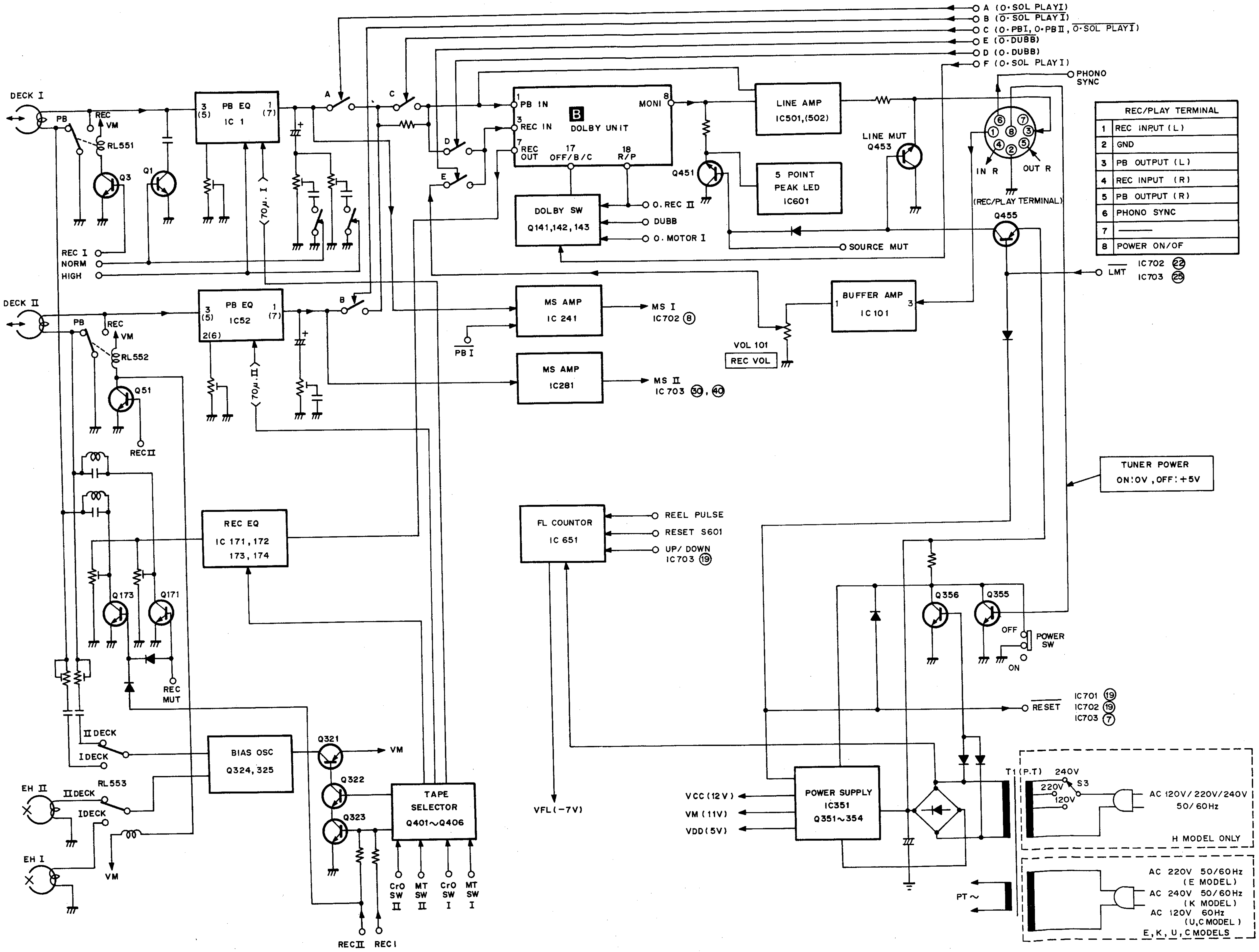


Outputs of micro computer are active-low


0
160
320
480
640
800
960
STOP→FWD PLAY
Mut releases
0ms
400ms
480ms
592ms
STOP→REV PLAY
Mut releases
0ms
48ms
272ms
400ms
480ms
592ms
STOP→ FWD PLAY PAUSE
0ms
400ms
STOP→ REV PLAY PAUSE
0ms
48ms
272ms
400ms
PLAY PAUSE→PLAY
Mut releases
0ms
80ms
192ms
PLAY→PLAY PAUSE
0ms
208ms
864ms
FWD PLAY→ REV PLAY
Mut releases
0ms
80ms
336ms
992ms
PLAY (PAUSE)→STOP
0ms
592ms

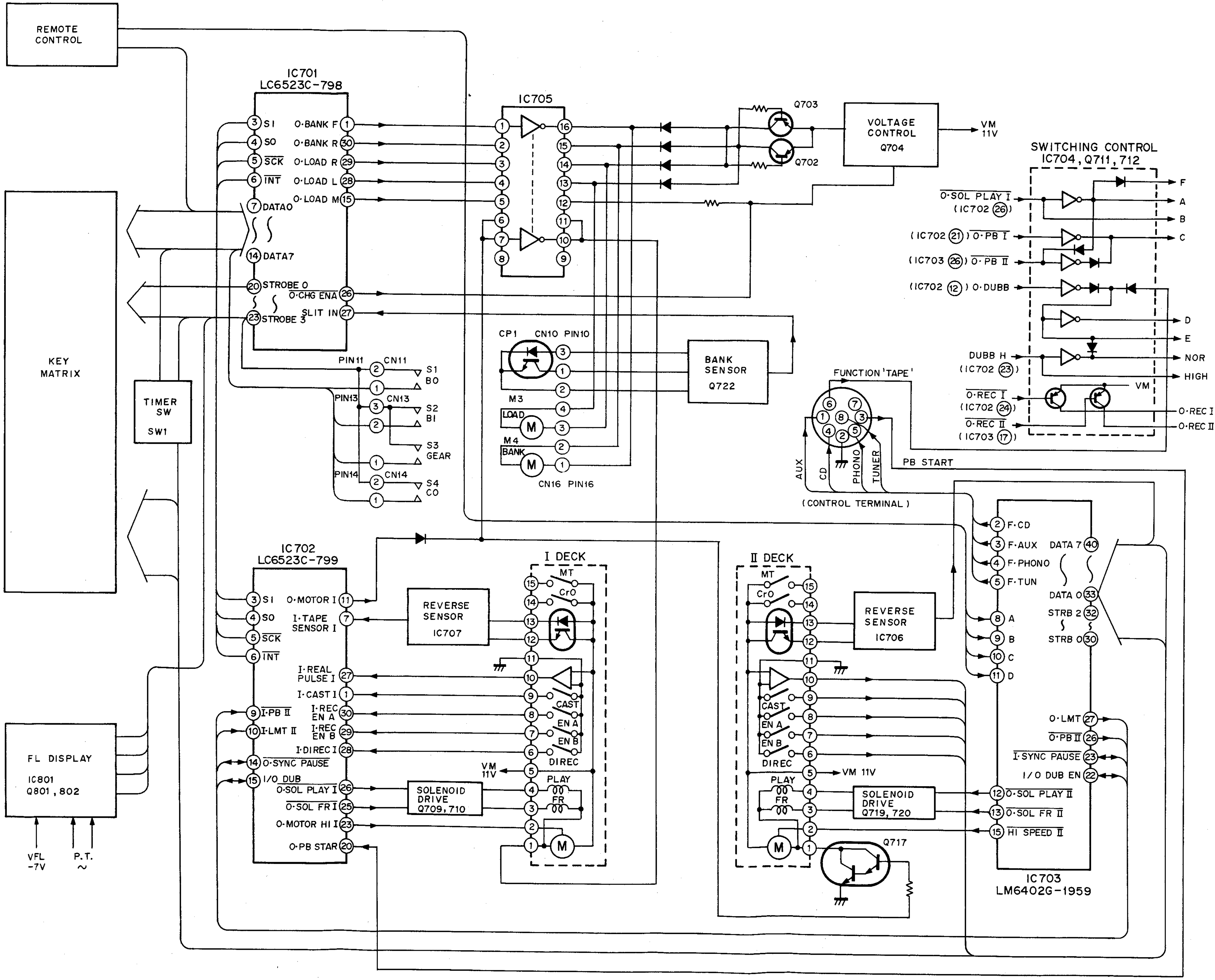
Outputs of micro computer are active-low

BLOCK DIAGRAM (FX-A770)



REC/PLAY TERMINAL	
1	REC INPUT (L)
2	GND
3	PB OUTPUT (L)
4	REC INPUT (R)
5	PB OUTPUT (R)
6	PHONO SYNC
7	———
8	POWER ON/OF

A (O·SOL PLAYI)
B (O·SOL PLAY I)
C (O·PBI, O·PBII, O·SOL PLAYI)
E (O·DUBB)
D (O·DUBB)
F (O·SOL PLAY I)
PHONO SYNC
DECK I
PB
REC
VM
RL551
Q3
Q1
PB EQ
IC 1
3 (5)
1 (7)
70μ. I
REC I
NORM
HIGH
A
C
D
E
1 PB IN
3 REC IN
7 REC OUT
17 OFF/B/C
18 R/P
MONI
8
B
DOLBY UNIT
DOLBY SW
Q141,142,143
O. REC II
DUBB
O. MOTOR I
LINE AMP
IC501,(502)
5 POINT PEAK LED
IC601
Q451
LINE MUT
Q453
IN R
OUT R
(REC/PLAY TERMINAL)
Q455
SOURCE MUT
LMT
IC702 ㉒
IC703 ㉕
DECK II
PB
REC
VM
RL552
Q51
REC II
PB EQ
IC52
3 (5)
1 (7)
2(6)
70μ. II
B
MS AMP
IC 241
MS I
IC702 ⑧
PB I
MS AMP
IC281
MS II
IC 703 ㉚, ㊵
BUFFER AMP
IC 101
1
3
VOL 101
REC VOL
TUNER POWER
ON:0V, OFF:+5V
REC EQ
IC 171, 172
173, 174
Q173
Q171
REC MUT
II DECK
I DECK
BIAS OSC
Q324, 325
Q321
VM
Q322
Q323
TAPE SELECTOR
Q401~Q406
CrO SW II
MT SW II
CrO SW I
MT SW I
REC II
REC I
EH II
II DECK
I DECK
RL553
EH I
VM
FL COUNTOR
IC 651
REEL PULSE
RESET S601
UP/DOWN
IC703 ⑲
VFL(-7V)
Q356
Q355
OFF
ON
POWER SW
RESET
IC701 ⑲
IC702 ⑲
IC703 ⑦
VCC(12V)
VM (11V)
VDD(5V)
POWER SUPPLY
IC351
Q351~354
T1 (P.T)
240V
220V
120V
S3
AC 120V/220V/240V
50/60Hz
H MODEL ONLY
PT ~
AC 220V 50/60Hz
(E MODEL)
AC 240V 50/60Hz
(K MODEL)
AC 120V 60Hz
(U,C MODEL)
E, K, U, C MODELS


REMOTE CONTROL
KEY MATRIX
TIMER SW
SW1
FL DISPLAY
IC801
Q801, 802
VFL -7V
P.T. ~
IC701
LC6523C-798
S I
SO
SCK
INT
DATA0
DATA7
STROBE 0
STROBE 3
O·BANK F
O·BANK R
O·LOAD R
O·LOAD L
O·LOAD M
O·CHG ENA
SLIT IN
IC705
Q703
Q702
VOLTAGE CONTROL
Q704
VM 11V
SWITCHING CONTROL
IC704, Q711, 712
O·SOL PLAY I
(IC702 ㉖)
(IC702 ㉑) O·PB I
(IC703 ㉖) O·PB II
(IC702 ⑫) O·DUBB
DUBB H
(IC702 ㉓)
O·REC I
(IC702 ㉔)
O·REC II
(IC703 ⑰)
VM
F
A
B
C
D
E
NOR
HIGH
O·REC I
O·REC II
CP1
CN10 PIN10
BANK SENSOR
Q722
M3
LOAD
M4
BANK
CN16 PIN16
PIN11
CN11
S1 BO
PIN13
CN13
S2 BI
S3 GEAR
PIN14
CN14
S4 CO
FUNCTION 'TAPE'
AUX
CD
PHONO
TUNER
PB START
(CONTROL TERMINAL)
IC702
LC6523C-799
O·MOTOR I
I·TAPE SENSOR I
I·REAL PULSE I
I·CAST I
I·PB II
I·REC EN A
I·LMT II
I·REC EN B
I·DIREC I
O·SYNC PAUSE
I/O DUB
O·SOL PLAY I
O·SOL FR I
O·MOTOR HI I
O·PB STAR
REVERSE SENSOR
IC707
SOLENOID DRIVE
Q709, 710
I DECK
MT
CrO
CAST
EN A
EN B
DIREC
PLAY
FR
VM 11V
II DECK
REVERSE SENSOR
IC706
SOLENOID DRIVE
Q719, 720
Q717
IC703
LM6402G-1959
F·CD
F·AUX
F·PHONO
F·TUN
DATA 7
DATA 0
STRB 2
STRB 0
A
B
C
D
O·LMT
O·PB II
I·SYNC PAUSE
I/O DUB EN
O·SOL PLAY II
O·SOL FR II
HI SPEED II

	CONTROL TERMINAL
1	AUX REC OUTPUT
2	GND
3	TP(PB START) OUTPUT
4	CD REC OUTPUT
5	PHONO REC OUTPUT
6	"H" INPUT AT TAPE FOR AMP FUNCTION
7	———
8	TUNER REC OUTPUT

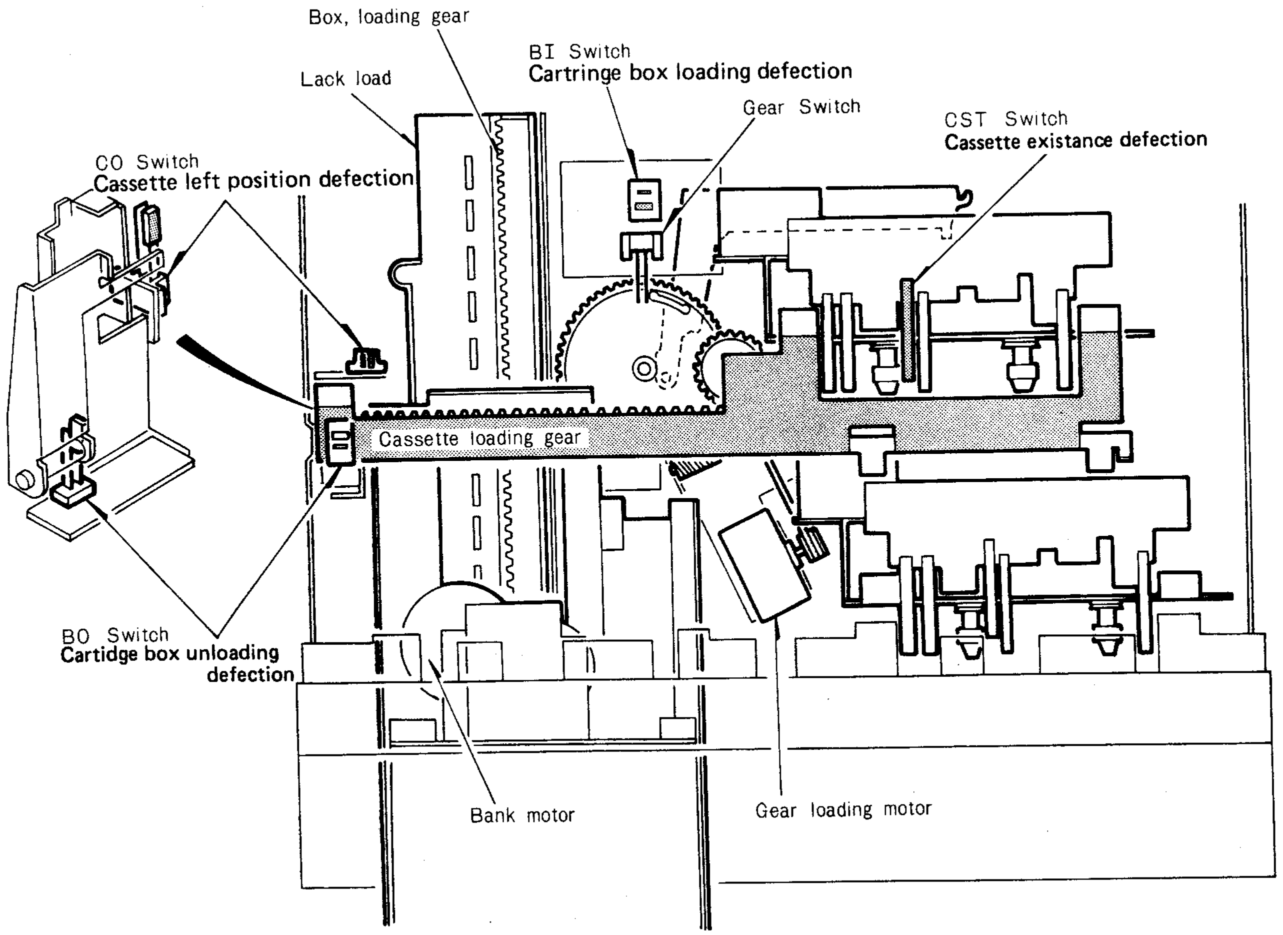
Auto Sorting (Auto Changer) Switches

Switch setting during bank operation (back and forth)

BO switch	BI switch	Operation
ON	OFF	When the bank is fully opened
OFF	OFF	When the bank is moved
ON	ON	When the bank is moved to the deepest
OFF	ON	None

Switch setting during sorting operation (right and left)

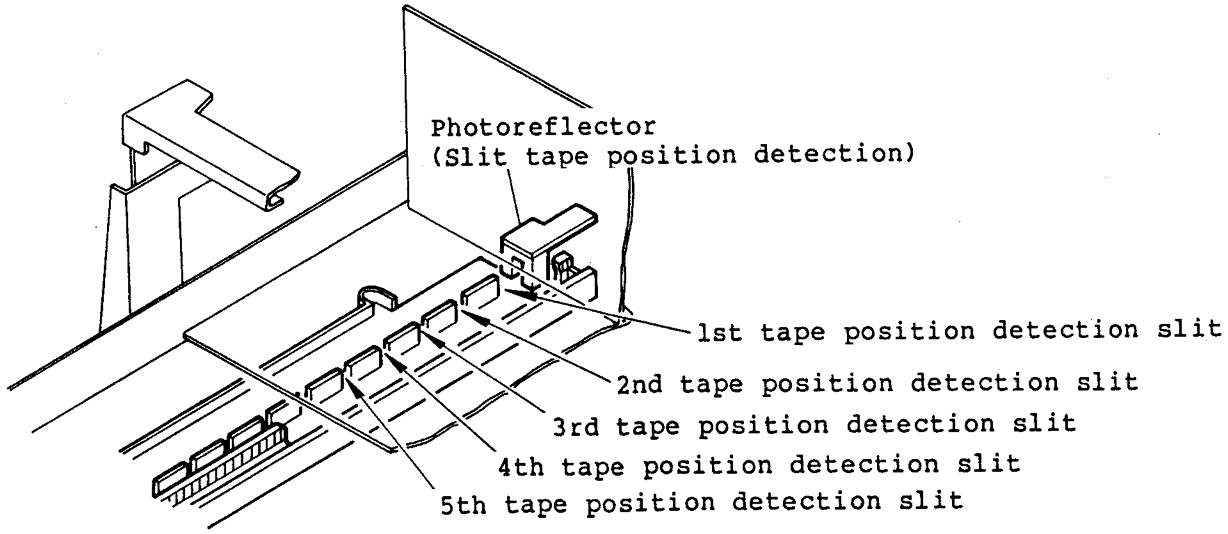
GEAR switch	CO switch	Operation
ON	ON	When the cassette is loaded into the bank
OFF	OFF	When the cassette is moved
ON	OFF	When cassette loading is completed
OFF	ON	None


Box, loading gear
Lack load
BI Switch
Cartringe box loading defection
Gear Switch
CST Switch
Cassette existance defection
CO Switch
Cassette left position defection
Cassette loading gear
BO Switch
Cartidge box unloading defection
Bank motor
Gear loading motor

Control input and output in mechanism (sorting mechanism) I

(A) SLIT IN input (photoreflector input) ... IC701 pin 27

- Cassette bank positioning sensor input terminal (active "H")
- When the BI switch is turned on during cassette load IN, the slit input is counted in the order of 5 → 4 → 3 → 2, and 1. At that time, the tape position display output appears on the fluorescent indicator tube.
  (To detect the bank position, the operation described above should be performed during power ON reset operation. However, it should not be performed in the TIMER CONT/EVERY REC mode.)
- The slit is detected from forward to backward.


Photoreflector
(Slit tape position detection)
1st tape position detection slit
2nd tape position detection slit
3rd tape position detection slit
4th tape position detection slit
5th tape position detection slit

(B) O-LOAD (SLOW) output ... IC701 pin 15

- Bank motor speed output ("H" in the SLOW mode)
- "H" is output only in the first through fifth tape position search mode of the bank motor.
- "L" during LOAD IN/OUT.
- "L" when the loading motor is driven.

(C) O-BANK R/O-BANK F output ... IC701 pins 1 and 30

- O-BANK R "H" is output when the bank is moved backward.
  O-BANK F "H" is output when the bank is moved forward.
- When the bank motor is activated, $\overline{\text{O-CHG ENA}}$ at pin 26 of IC701 goes "H", and O-BANK R "H" or O-BANK F "H" is output.
- When the bank motor is stopped, $\overline{\text{O-CHG ENA}}$ at pin 26 of IC701 goes "L", and O-BANK R "H" and O-BANK F "H" are output to perform braking.

(D) O-LOAD L/O-LOAD R output ... IC701 pins 28 and 29

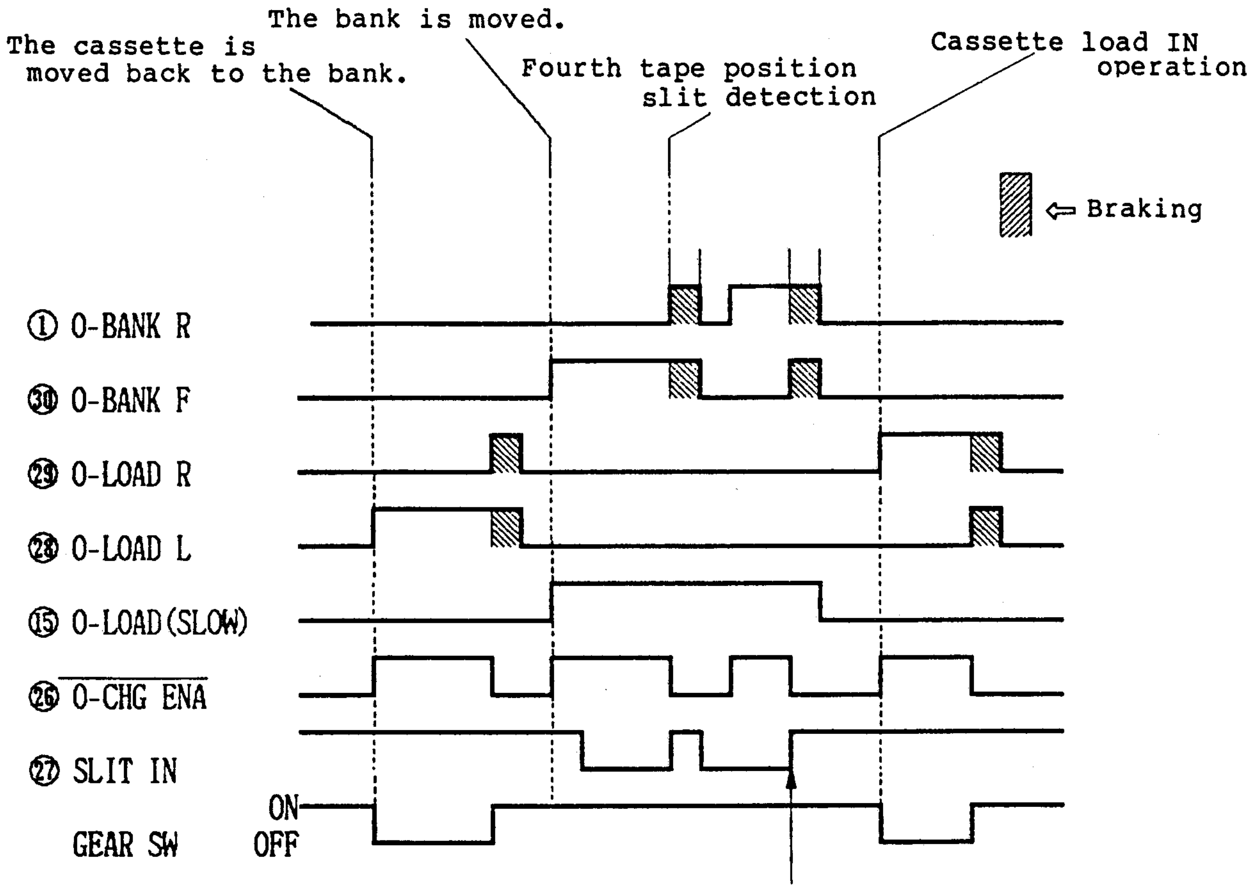
- When the cassette is loaded to the right using a loading motor, O-LOAD R "H" is output.
- When the cassette is loaded to the left using a loading motor, O-LOAD L "H" is output.
- When the loading motor is activated, $\overline{\text{O-CHG ENA}}$ goes "H", and O-LOAD R "H" or O-BANK L "H" is output.
- When GEAR SW "ON" is detected, $\overline{\text{O-CHG ENA}}$ goes "L", and O-LOAD R "H" and O-LOAD L "H" are output to perform braking.

(E) $\overline{\text{O-CHG ENA}}$ output ... IC701 pin 26

- Sorting can be performed when $\overline{\text{O-CHG ENA}}$ "H" is output.

Sorting timing chart

(Example)
When the tape is moved from the fifth position to the fourth position



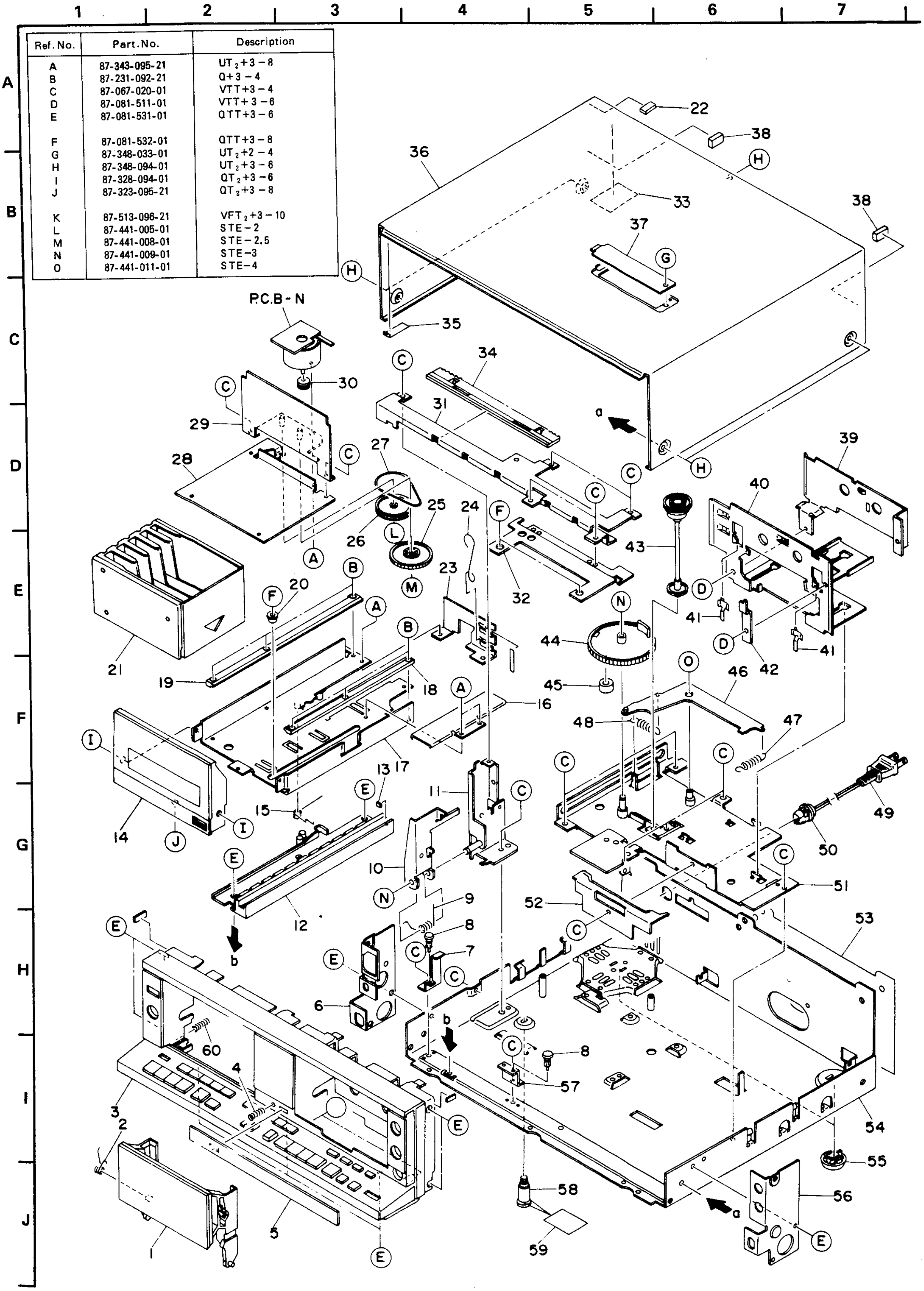
(Slits are detected in the same direction (forward to backward).
When the tape is moved from the fifth position to the fourth position, the cassette passes through slit 4 one time, detects slit 4 and stops.)

After bank and loading motor operations are completed, braking is performed.

☆ **MEMO** ☆

EXPLODED VIEW-1

Ref. No.	Part. No.	Description
A	87-343-095-21	UT$_2$+3 − 8
B	87-231-092-21	Q+3 − 4
C	87-067-020-01	VTT+3 − 4
D	87-081-511-01	VTT+3 − 6
E	87-081-531-01	QTT+3 − 6
F	87-081-532-01	QTT+3 − 8
G	87-348-033-01	UT$_2$+2 − 4
H	87-348-094-01	UT$_2$+3 − 6
I	87-328-094-01	QT$_2$+3 − 6
J	87-323-095-21	QT$_2$+3 − 8
K	87-513-096-21	VFT$_2$+3 − 10
L	87-441-005-01	STE − 2
M	87-441-008-01	STE − 2.5
N	87-441-009-01	STE − 3
O	87-441-011-01	STE − 4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L
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MECHANICAL PARTS LIST

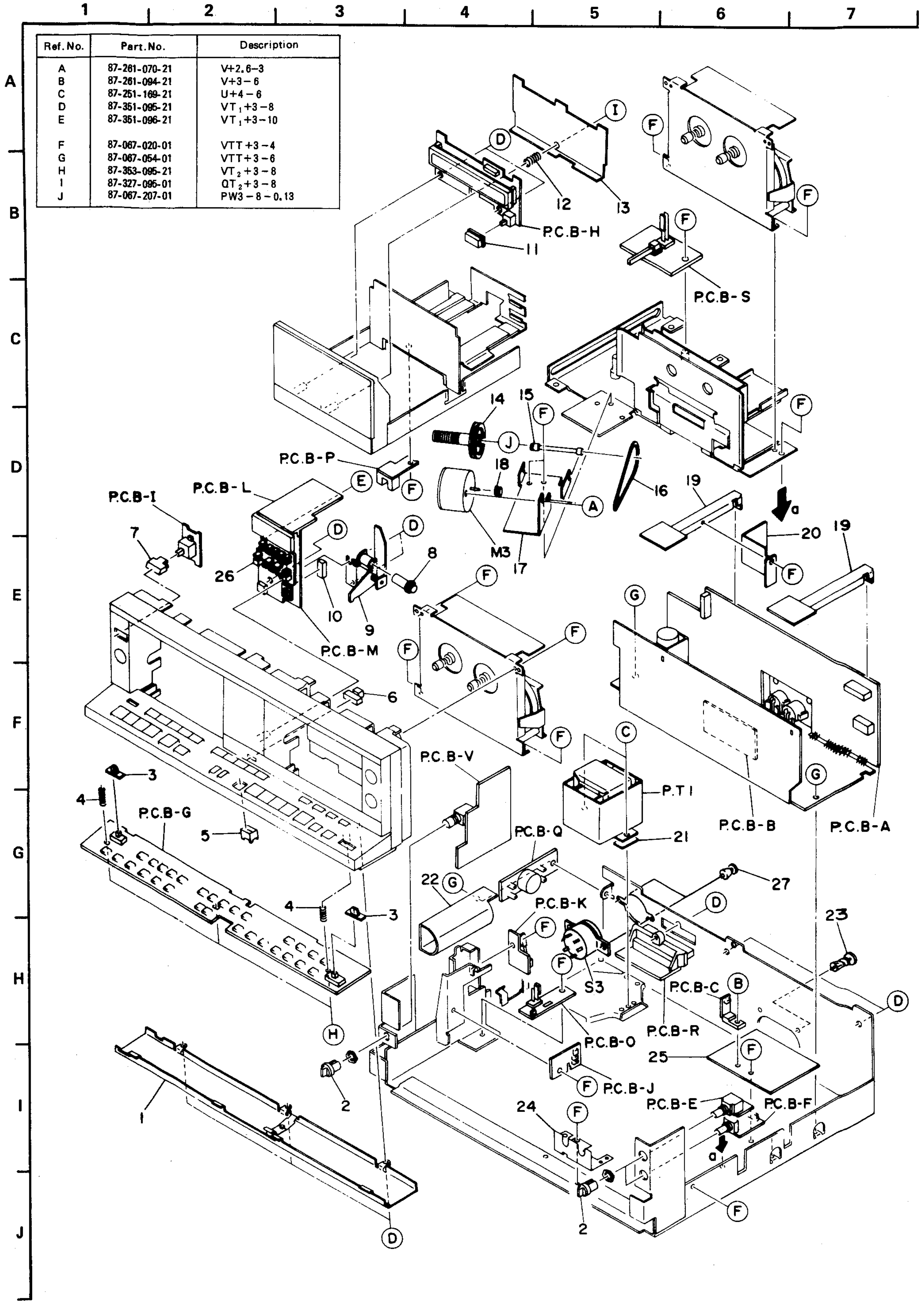
- ✱-mark in this part list shows exclusive part.
- ★-mark means less required items and availabilities may be limited.
- No availability part is warked with ——— in Part No. list.

Part No. Changed to	Ref No.	Part No.	Description	Common Model	Q'ty
	1-1	82-110-014	CASSETTE BOX Ass'y	※	1
	1-2	★82-197-207	T-SPRING, EJECT	FX-90	1
	1-3	★82-110-033	FRONT CABINET 2 (B) EX Ass'y Y	※	1
	1-4	★82-111-207	C-SPRING, FRONT EARTH B		1
	1-5	—	DECORATION PANEL 2R		1
	1-6	—	HOLDER SIDE 2L		1
	1-7	★86-523-259	HOLDER SIDE A		1
	1-8	★87-085-080	NYLON RIVET 3−3.5		2
	1-9	★86-523-266	T-SPRING, DOLBY LEVER		1
	1-10	★82-141-207	LEVER DOLBY SWITCH	FX-A120	1
	1-11	★86-523-265	RACK HOLDER L Ass'y		1
	1-12	★82-141-222	RACK LOAD	FX-A120	1
	1-13	★86-523-281	G CUSHION, RACK LOAD		1
	1-14	82-110-016	DOOR CASSETTE Ass'y	※	1
	1-15	★86-523-264	T-SPRING, LOCK LEVER		1
	1-16	—	HOLDER, WIRE A		1
	1-17	★86-523-202	CHASSIS CB Ass'y		1
	1-18	★86-523-245	GUIDE RAIL R		1
	1-19	★86-523-246	GUIDE RAIL L		1
	1-20	★86-523-208	ROLLER, CENTER		1
	1-21	★82-141-022	CASSETTE BANK Ass'y	FX-A120	2
	1-22	—	G CUSHION 7−5−3.5		1
	1-23	—	HOLDER, WIRE		1
	1-24	★82-110-217	WIRE BINDER	※	1
	1-25	★82-141-229	GEAR, LOAD	FX-A120	1
	1-26	★84-700-224	GEAR, LOAD	DX-1000	1
	1-27	86-523-267	RUBBER BELT, LOAD		1
	1-28	★86-523-205	SLIDE CHASSIS CB Ass'y		1
	1-29	★86-523-269	BLIND CB Ass'y N		1
	1-30	★84-127-205	MOTOR PULLEY L		1
	1-31	★86-523-234	HOLDER, RACK		1
	1-32	★86-523-235	HOLDER, MECHANISM JOINT		1
	1-33	—	INSULATION SHEET U		1
	1-34	★86-516-280	RACK		1
	1-35	★81-735-214	PLATE SPRING B, EARTH		1
	1-36	★82-110-035	STEEL CABINET H (B)	※	1
	1-37	★82-110-023	CLEANING LID (B)	※	1
	1-38	—	G CUSHION 5−5−10		2
	1-39	★86-523-228	C-BOX B		1
	1-40	★86-523-227	C-BOX A		1
	1-41	★86-523-238	P-SPRING, INSTALLATION		2
	1-42	★86-523-236	RACK STOPPER		1
	1-43	★86-523-230	RACK GEAR Ass'y		1
	1-44	★86-523-223	GEAR, CAM		1
	1-45	★86-523-279	G CUSHION, GEAR CAM		1
	1-46	★86-523-242	LEVER CAM Ass'y		1
	1-47	★86-523-229	E-SPRING, C-BOX		1
	1-48	★86-523-248	E-SPRING, LEVER CAM		1
	1-49	★87-034-962	AC POWER CORD (H only)		1
		★87-034-994	AC POWER CORD (U, C only)		1
		★82-788-674	AC POWER CORD (E only)		1
		★87-034-708	AC POWER CORD (K only)		1
	1-50	★87-085-184	CORD BUSHING (H, U, C only)		1
		★87-085-185	CORD BUSHING (E, K only)		1
	1-51	★86-523-220	CASSETTE MECHANISM HOLDER Ass'y		1
	1-52	★86-523-225	TAPE PLATFORM		1
	1-53	—	JACK PLATE		1
	1-54	—	AMP. CHASSIS Ass'y		1
	1-55	★87-055-057	FOOT B		2
	1-56	—	HOLDER, SIDE R		1
	1-57	—	HOLDER, SIDE		1
	1-58	★86-523-209	SCREW		1
	1-59	—	CAUTION TAG A120		1
	1-60	★82-110-221	C-SPRING, PANEL L	※	1

☆ **MEMO** ☆

EXPLODED VIEW-2

Ref. No.	Part. No.	Description
A	87-261-070-21	V+2.6−3
B	87-261-094-21	V+3−6
C	87-251-169-21	U+4−6
D	87-351-095-21	VT_1+3−8
E	87-351-096-21	VT_1+3−10
F	87-067-020-01	VTT+3−4
G	87-067-054-01	VTT+3−6
H	87-353-095-21	VT_2+3−8
I	87-327-095-01	QT_2+3−8
J	87-067-207-01	PW3−8−0.13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P.C.B-F
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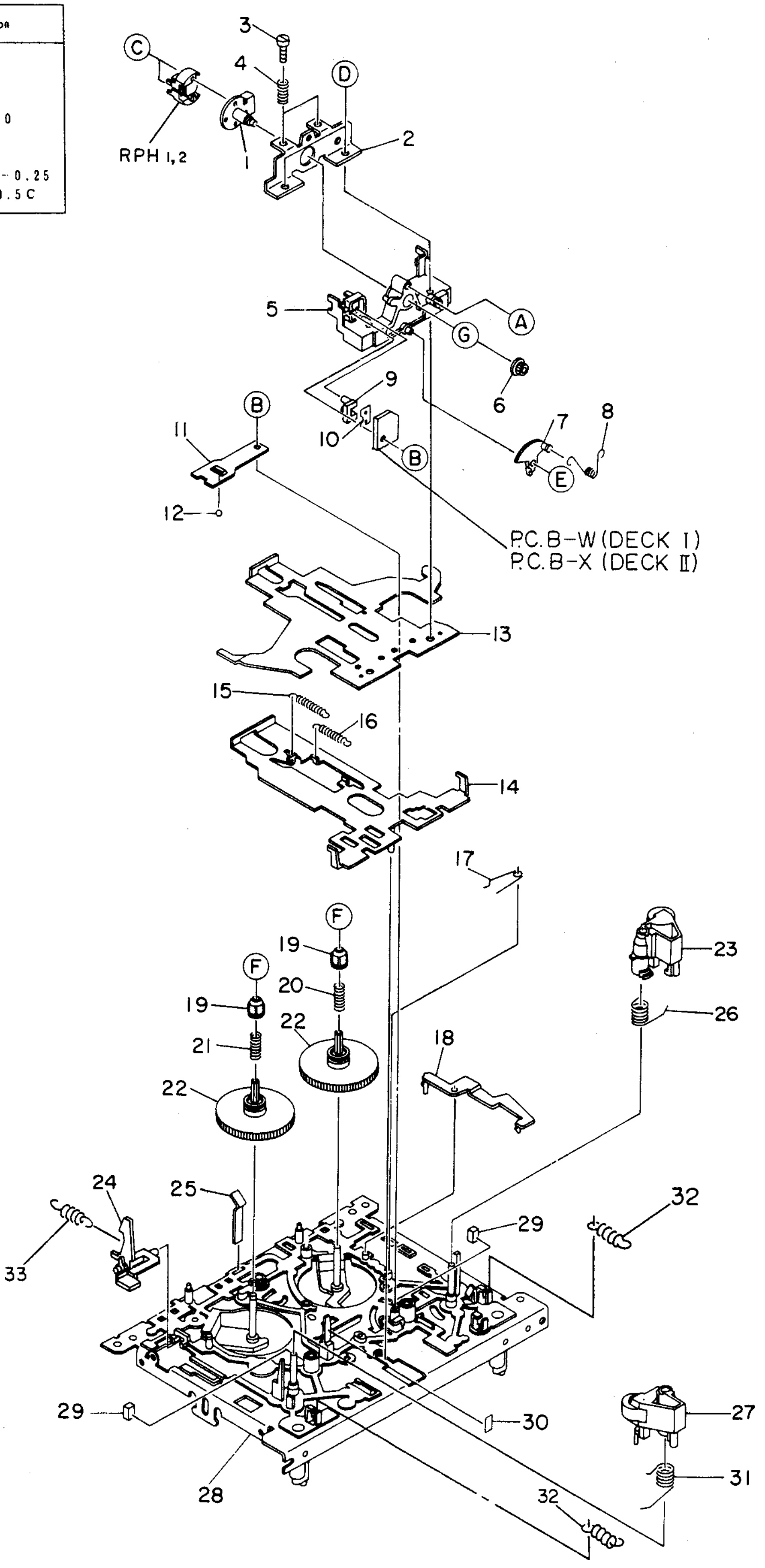
Part No. Changed to	Ref. No.	Part No.	Description	Common Model	Q'ty
	2-1	★82-110-013	BOTTOM CABINET Ass'y	※	1
	2-2	★81-752-014	KNOB	MX-550	3
	2-3	★82-142-015	SLIDE KNOB		2
	2-4	★82-146-214	C-SPRING, FRONT EARTH	FX-W60	2
	2-5	★82-136-022	KNOB, EJECT A		1
	2-6	★82-110-025	PUSH-BUTTON, RESET	※	1
	2-7	★84-714-013	BUTTON, POWER	DX-770	1
	2-8	★82-534-264	GEAR, OIL-DAMP		1
	2-9	★82-110-206	HOLDER EJECT Ass'y	※	1
	2-10	★84-711-292	CUSHION FL	DX-1200	2
	2-11	★82-141-031	TOUCH-KEY, OPEN	FX-A120	1
	2-12	★82-110-223	C-SPRING, DOOR CASSETTE	※	1
	2-13	—	REAR PLATE, CASSETTE DOOR		1
	2-14	★86-516-264	WARM GEAR		1
	2-15	★86-523-224	SHAFT, WARM GEAR		1
	2-16	86-523-244	BELT, WARM GEAR		1
	2-17	★86-523-241	HOLDER, MOTOR		1
	2-18	★84-712-381	MOTOR PULLEY		1
	2-19	—	HOLDER, CIRCUIT BOARD		2
	2-20	—	SHIELD PLATE A		1
	2-21	★82-110-224	SPACER P.T	※	2
	2-22	★82-110-228	COVER, RELAY CIRCUIT BOARD	※	1
	2-23	★87-085-102	NYLON RIVET 3.5–5.5		2
	2-24	★82-143-208	SHIELD PLATE, HEAD R		1
	2-25	—	HEAT SINK PLATE		1
	2-26	★82-110-216	GUIDE, LED	※	1
	2-27	★87-085-090	NYLON RIVET 3–6.5 (H only)		2

EXPLODED VIEW-3

Ref. No.	Part No.	Description
A	87-251-036-21	U + 2 - 8
B	87-351-033-21	VT + 2 - 4
C	87-067-177-01	V + 1.6 - 5.5
D	87-081-504-01	VTT + 2.6 - 10
E	87-067-217-01	VFT + 2 - 6
F	87-081-808-01	PW1.7 - 3.5 - 0.25
G	87-067-105-01	PW3.4 - 8 - 0.5C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P.C.B-W (DECK I)
P.C.B-X (DECK II)
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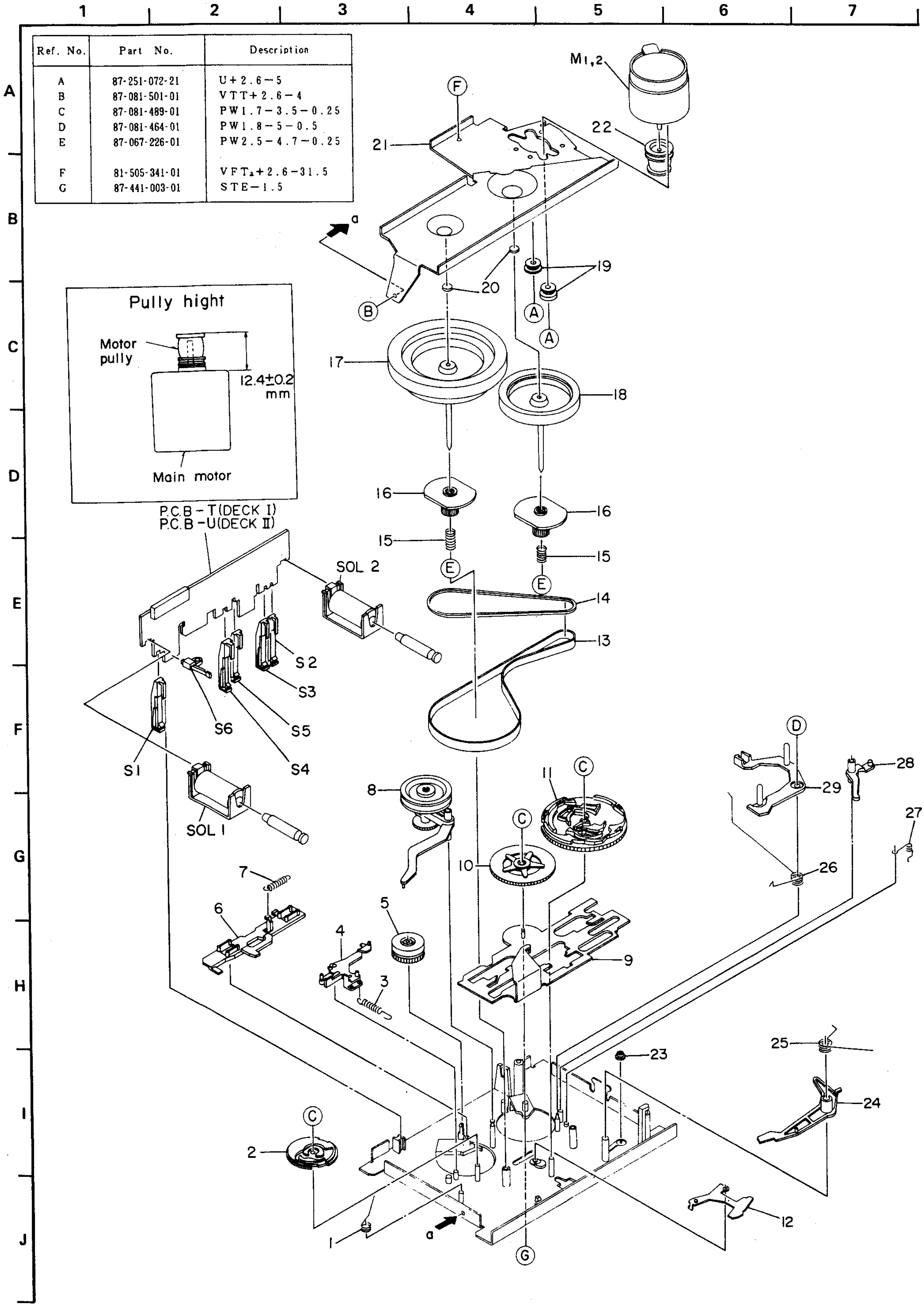
Part No. Changed to	Ref. No.	Part No.	Description	Common Model	Q'ty	
	3-1	86-513-267	HEAD HOUSING Ass'y		1	
	3-2	★86-517-268	HOLDER, AZIMUTH SCREW		1	
	3-3	86-517-296	AZIMUTH SCREW (DECK Ⅱ)		2	
		★86-523-272	HEXAGON AZIMUTH SCREW (DECK Ⅰ)		2	
	3-4	★86-517-291	C-SPRING, AZIMUTH		2	
	3-5	★86-517-269	HEAD BASE Ass'y		1	
	3-6	86-513-229	GEAR, HEAD HOUSING		1	
	3-7	86-517-273	GEAR, HEAD ROLLING A		1	
	3-8	★86-517-282	T-SPRING, HEAD ROLLING		1	
	3-9	★86-517-297	SENSOR LENS		1	
	3-10	—	SHEET, SENSOR LENS		1	
	3-11	★86-517-275	P-SPRING, ACTUATING CHASSIS		1	
	3-12	★87-073-008	STEEL BALL 2.5		1	
	3-13	★86-517-305	ACTUATING CHASSIS R		1	
	3-14	★86-517-308	LEVER MOVEMENT REVERSE Ass'y		1	
	3-15	★86-517-312	E-SPRING, LEVER MOVEMENT		1	
	3-16	★86-517-370	E-SPRING, ACTUATING CHASIS R		1	
	3-17	★86-517-310	T-SPRING, LEVER QUICK		1	
	3-18	★86-517-258	LEVER, DILECTION		1	
	3-19	86-517-236	STOPPER, REEL PLATFORM		2	
	3-20	★86-517-333	C-SPRING, REEL PLATFORM A		1	
	3-21	★86-519-234	C-SPRING, REEL PLATFORM S		1	
	3-22	86-517-235	REEL PLATFORM		2	
	2-23	86-517-248	PINCH LEVER F Ass'y		1	
	2-24	★86-517-256	LEVER, EJECT		1	
	2-25	★86-517-276	P-SPRING, CASSETTE		1	
	3-26	★86-517-277	T-SPRING, PINCH LEVER F		1	
	3-27	86-517-250	PINCH LEVER R Ass'y		1	
	3-28	—	OUTSERT R Ass'y		1	
	3-29	—	CUSHION, ACTUATING CHASSIS		2	
	3-30	—	SHEET, QUICK		1	
	3-31	★86-517-289	T-SPRING, PINCH LEVER R		1	
	3-32	★86-513-340	E-SPRING, AUTO BLOCKING		2	
	3-33	★86-519-241	E-SPRING, EJECT LEVER		1	

EXPLODED VIEW-4

Ref. No.	Part No.	Description
A	87-251-072-21	U+2.6-5
B	87-081-501-01	VTT+2.6-4
C	87-081-489-01	PW1.7-3.5-0.25
D	87-081-464-01	PW1.8-5-0.5
E	87-067-226-01	PW2.5-4.7-0.25
F	81-505-341-01	VFT$_2$+2.6-31.5
G	87-441-003-01	STE-1.5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Pully hight
Motor pully
12.4±0.2 mm
Main motor
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P.C.B-T(DECK I)
P.C.B-U(DECK II)
SOL 2
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S5
S4
S6
S1
SOL 1
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Part No. Changed to	Ref.No.	Part.No.	Description	Common Model	Q'ty
	4-1	★86-517-278	T-SPRING, FR CAM		1
	4-2	86-517-215	GEAR, FR CAM C		1
	4-3	★86-517-346	E-SPRING, TRIGGER LEVER FR		1
	4-4	★86-517-257	TRIGGER LEVER FR		1
	4-5	86-517-238	GEAR,FF		1
	4-6	★86-517-254	LEVER, SLIDE BRAKE		1
	4-7	★86-517-284	E-SPRING, SLIDE BRAKE		1
	4-8	86-517-239	FR PULLEY A Ass'y		1
	4-9	★86-517-263	SLIDE PLATE R Ass'y		1
	4-10	86-517-225	GEAR PLAY R Ass'y		1
	4-11	86-517-336	GEAR MAIN CAM R Ass'y		1
	4-12	★86-517-306	LEVER QUICK Ass'y		1
	4-13	86-517-354	MAIN BELT R-2-A		1
	4-14	86-517-302	BELT FR-2		1
	4-15	★86-517-323	C-SPRING, FLYWHEEL DC F		2
	4-16	86-517-317	GEAR, FLYWHEEL DC F		2
	4-17	86-517-314	FLYWHEEL DC F Ass'y		1
	4-18	86-517-318	FLYWHEEL DC R Ass'y		1
	4-19	★86-513-441	COLLAR		2
	4-20	★86-517-348	FLYWHEEL BEARING		2
	4-21	—	MOTOR HOLDER DC		1
	4-22	86-517-389	MOTOR PULLEY		1
	4-23	★86-517-345	COLLAR, SLIDE PLATE R		1
	4-24	★86-517-252	TRIGGER LEVER PLAY-A		1
	4-25	★86-517-280	T-SPRING, TRIGGER LEVER PLAY		1
	4-26	★86-517-332	T-SPRING, LEVER SWITCH		1
	4-27	★86-517-281	T-SPRING, SLIDE LEVER R		1
	4-28	★86-517-253	TRIGGER LEVER PLAY-B		1
	4-29	★86-517-255	LEVER SWITCH		1

■ ACCESSORIES/PACKAGE LIST

Part No. Changed to	Ref.No.	Part No.	Description	Common Model	Q'ty	
	1	★82-110-904	INSTRUCTION BOOKLET (H, E, K, only)	※	1	
	2	★82-110-905	INSTRUCTION BOOKLET (U, C only)	※	1	
	3	★82-141-022	CASSETTE BANK Ass'y		2	

AIWA Co., Ltd. Tokyo Japan

Printed in japan